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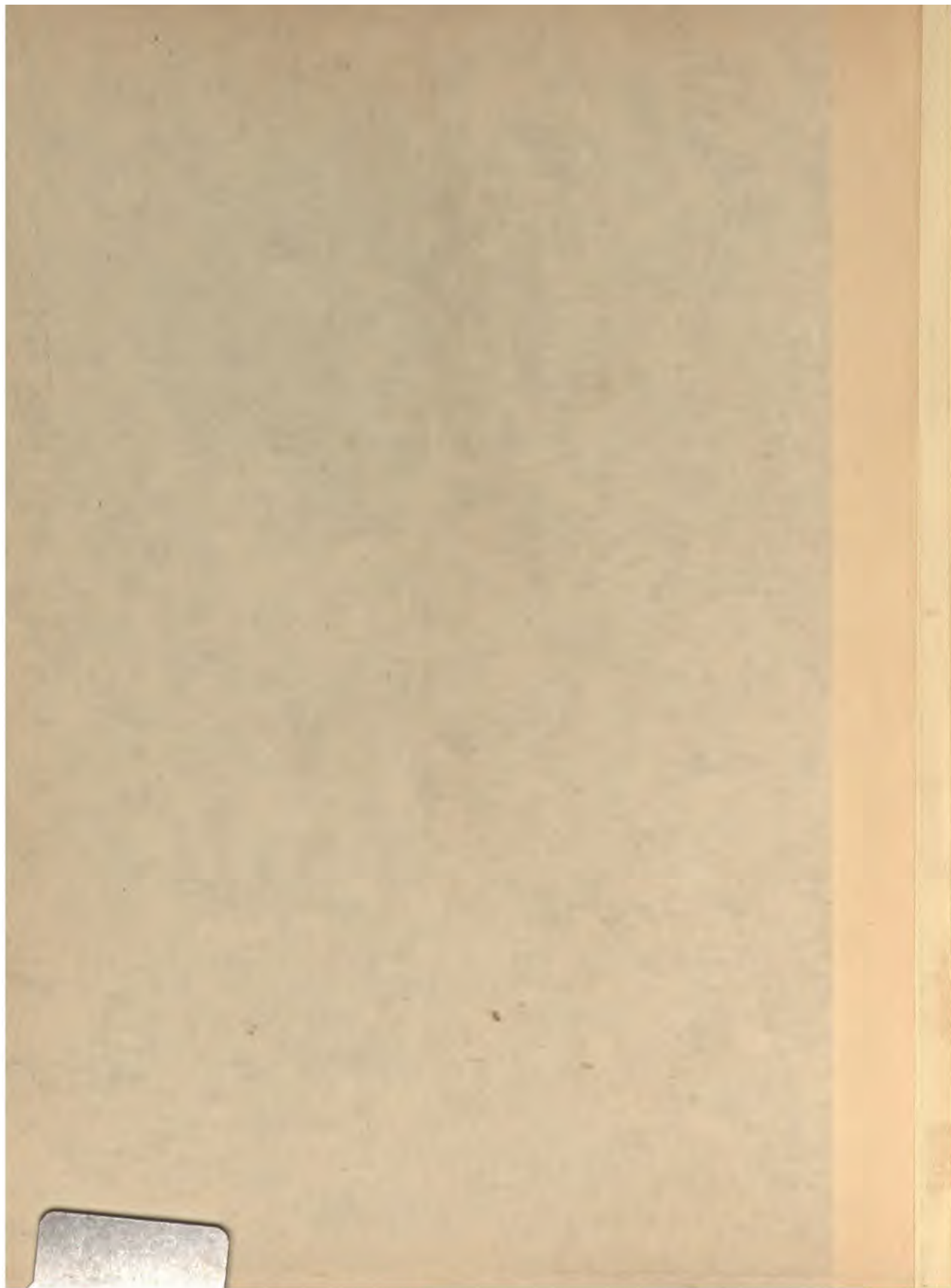
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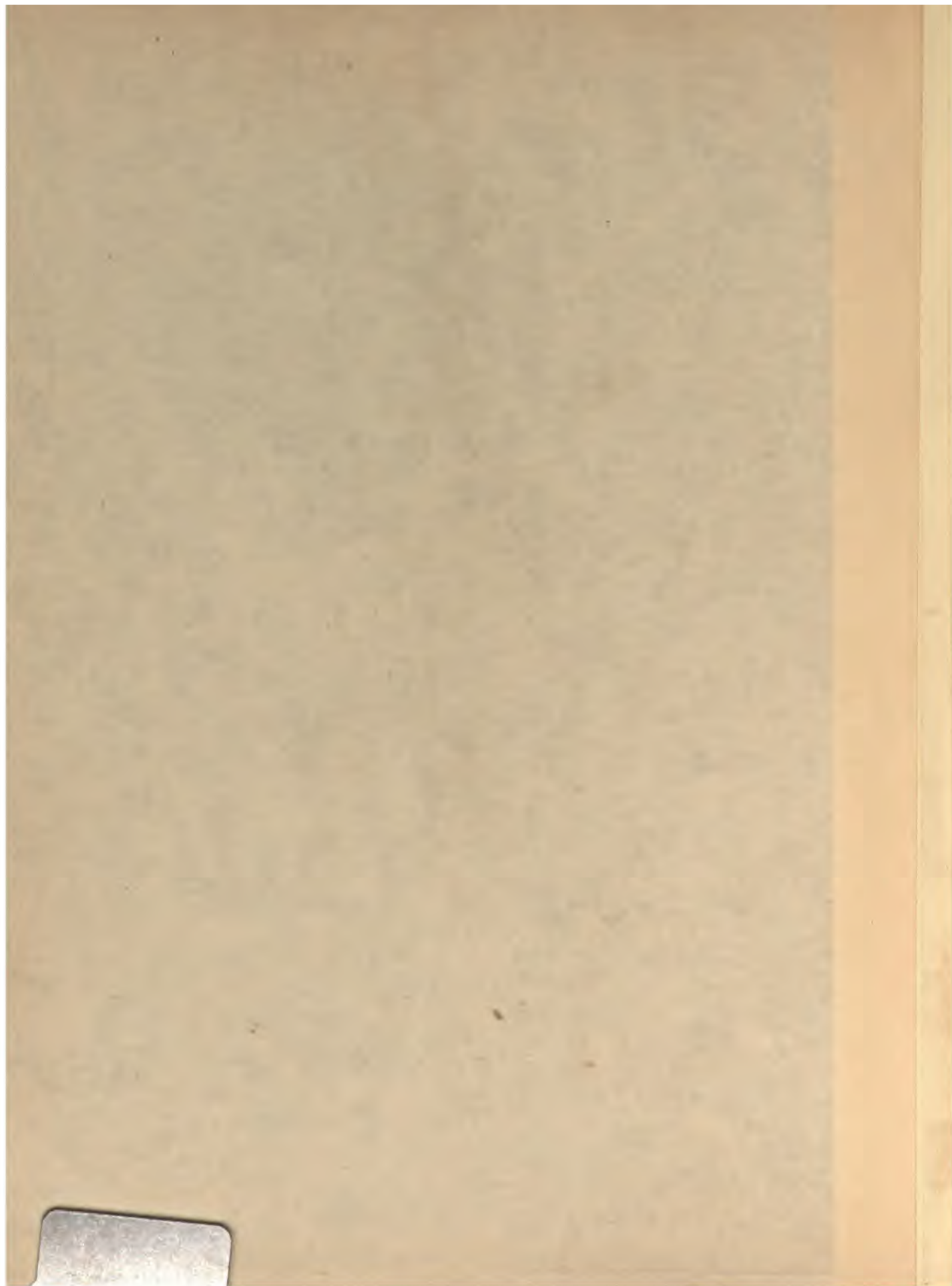
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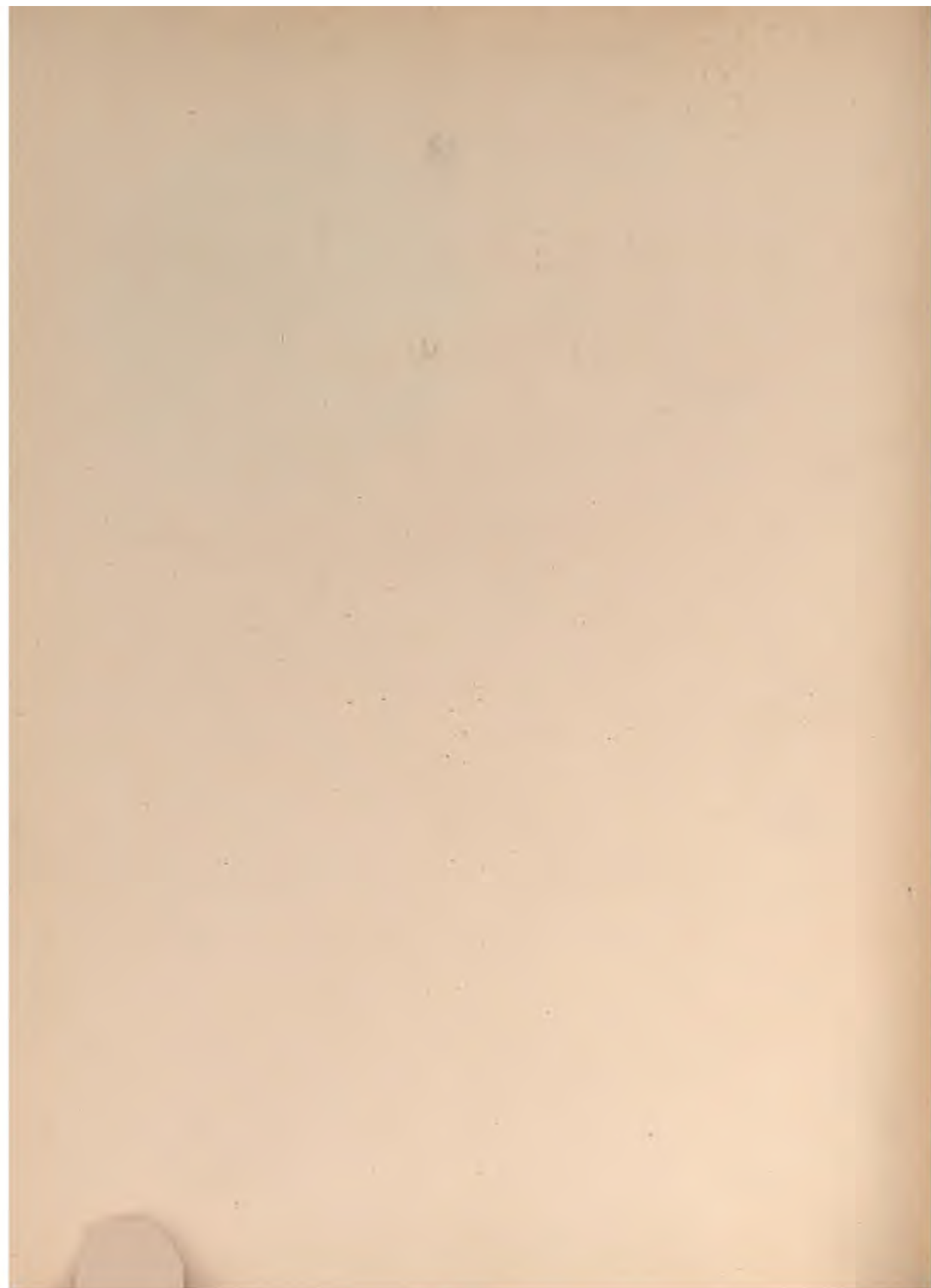
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The Commercial Aspect of the Chemical and Allied Industries.

EDITED BY

GEORGE E. DAVIS,

FORMERLY ONE OF HER MAJESTY'S INSPECTORS OF ALKALI WORKS,
CHEMICAL ENGINEER AND CONSULTING CHEMIST.

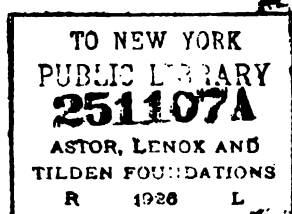
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Contents.

	PAGE		PAGE
Between Two Stools.....	1	Miscellaneous Chemical Market ..	8
The Bradford Tar Works Explosion	2	The Metal Markets.....	9
The Patent List	3	Report on Manure Material	9
Abstracts of Latest Complete Spec-		Liverpool Oil and Colour Market..	9
ifications	3	Hull Paint, Oil, and Colour Report	9
Analysis of Phosphor Bronze.....	4	West of Scotland Chemicals	9
Exhibits at the Royal Show	4	Tyne Chemical Report	9
The Salford Sewage Case	6	New Companies.....	10
The Utah Guano Deposits	7	Imports.....	10
Legal Intelligence.....	7	Exports	13
Trade Notes	8	Prices Current	16
Tar and Ammonia Products	8		

LATE ADVERTISEMENTS.

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BETWEEN TWO STOOLS.

THE sewage question and discussions thereon seem lately to be regaining their ascendancy in the technical world. A year or two ago there was hardly a meeting of a technical society at which some reference to the sewage question was not made, in the shape of a paper or some other communication. The craze, if we may so designate it, soon spent itself, however, and any reference to sewage was tabooed by all except those who were intimately associated with such matters.

From the turn events have recently taken, it would seem that there has been a reversion of feeling, but in renewing the discussion on this question it has been approached this time by some different channels. It is also clear that there are those who begin to hold wider and less hysterical views than of yore.

This was made apparent in the course of the step that was taken this week in the important case, now pending between the conservators of the rivers Mersey and Irwell, in the personality of the Joint Committee, and the Salford Corporation.

Presumably, having in remembrance the fact that you cannot make a horse drink against its will, His Honour Judge Parry pointed out that if the one and only object of the Committee was to stop the pollution of the river they would not further their object much by peremptory measures. Fines in some cases are excellent things, but they do not hasten affairs much, when the delay is caused by the consideration of the expenditure of thousands of pounds. On the contrary, they only tend to irritate and breed bad feeling.

It was evidently owing to the existence of such a belief that His Honour decided on another adjournment, thus giving credence to the impression that this time, at all events, Salford was doing its best to progress, however dilatory it may appear when judged by the autocratic standards of the Joint Committee.

Those who have to cope with the disposal of sewage are just now in an awkward position between two opposing forces. The one is the inexorable spirit of purification, which never lacks advocates to reiterate the ceaseless cry of Purify! Purify! Cost is nothing to them. They would rather see thousands wasted in a futile attempt to effect purification than admit that their cry is often parrot-like and unreasonable. The other thorn in the flesh of the problem-solver is the captious critic of expenditure. He patronizes the purification partisans until he has counted the cost, and then at once picks holes in the work of the hapless tool, never blaming in the least those who compelled it to be put to work untempered and unsharpened.

We have never been disposed to gloss over anything like wanton expenditure in public matters, no matter how great and beneficial the task achieved may have been, but there is one thing both city worthies and ratepayers have to face.

and that is the fact that sewage purification in cities means expense—at first very heavy expense.

While on this point we feel impelled to emphasise one other thing. Let financial critics allow anything like legitimate expenditure on sewage treatment proper to pass unchallenged, and pay closer heed to what may be termed the superfluities and incidentals.

A sludge steamer, though expensive, may be a sheer necessity, but an elaborate launching ceremony, and the journeying forth of a whole Rivers' Committee to witness it, is not. The vessel won't carry sludge one whit the better, neither is the solution of the sewage problem advanced a jot. Yet we will venture to state that the incidental expenses would cover the cost of an additional chemist for a year, or even longer, as the salaries of Corporation chemists go. In lieu of this it would even be far better if the money were devoted to paying the expenses entailed by councillors in visits of inspection to the works, and the acquirement of knowledge at scientific meetings and elsewhere.

It must not be thought that by the mere relegation of the matter to a Committee it has been dismissed, for, though the more intricate and heavier labours may be carried out by that Committee, it is still the duty of the rest to study and grasp the essentials, so that the recommendations of the Committee may be discussed in Council in a broad-minded and appreciative spirit. It is not a one man or one Committee task. Everyone must do their share if anything is to be accomplished.

These are points that apply to almost every corporate body, and to outsiders, it is the crude criticisms of the half-informed and the general lack of co-operation between Committees and Councils that produce so many schemes and so little actual treatment.

Between the menaces and obstructions of these two forces, therefore, those who are labouring for the establishment of sewage treatment on a reasonable basis stand in no little danger of a collapse—that is, of course, if there is no change in policy. On the other hand, we do not think there is any doubt that if these forces, which are both equally capable of much good or much harm, are exercised in a strictly honest and tolerant spirit, the present omnipotence of that tyrant—Sewage will soon begin to wane.

It is a matter for individual effort on the part of ratepayers and councillors in every borough. Apart they can do little; yet a hopeful future lies before those boroughs, in which the ratepayers will exercise their intelligence and powers in watching their representatives and supporting or substituting accordingly, and wherein councillors will fit themselves as a whole to criticise and amend schemes, bearing in mind the necessity of avoiding the dangerous extremes we have indicated.

THE BRADFORD TAR WORKS EXPLOSION. THE ADJOURNED INQUEST.

THE adjourned inquest on the bodies of Daniel Duddle (45) and Tom Horrocks (18), who were killed by an explosion at Mr. Hamor Lockwood's chemical works at Bradford, on the 17th ult. (*C.T.J.* 526, p. 415), was held at the Manchester City Coroner's Court on Wednesday. The two men, who were employed by Mr. Lockwood, had lived respectively in Ashton New-road and Clayton-street. Mr. Rylands (Boote and Edgar) watched the proceedings on behalf of the owner of the works, and Mr. Rogers, factory inspector, and Mr. Herbert Porter, Local Government Board inspector under the Alkali Act, were also present.

The first witness examined was Joseph Eyres, a stillman at the works. He stated that between ten and eleven o'clock on the morning of the 17th ult. he noticed Duddle and Horrocks at their work. The former was attending to a still known as No. 5, whilst the latter had charge of a steam boiler, which was in connection with the still. He

was in a shed when he heard an explosion, and on running out saw Duddle's still enveloped in flames. The whole works were lighted up, and burning oil and tar were spread over the yard. The flames burnt fiercely for nearly an hour, but were finally extinguished by the work-people and members of the Fire Brigade. He did not see the bodies of Duddle and Horrocks found. The witness at the request of the Coroner then gave particulars of the working of the still.

By the Coroner: He had never been cautioned in regard to anything relating to the management of a still.

By Mr. Rogers: He had heard of tar still worms being blocked by the oil getting solidified when it was allowed to cool.

Henry Brooks, a fireman stationed at Brook-street Police Station, said he attended the fire at Mr. Lockwood's works. On getting there he found the whole place in flames, and at once got a jet to work. After being engaged about ten minutes, he came across the body of Duddle lying in the debris close to the still. The man was dead, and in a roasting condition. He kept the jet at work, and the deceased was got out by two other men.

David Jones, the manager of the works, spoke to finding the body of Horrocks (who had evidently been burnt to death) four or five yards from the still. Describing the process going on at the still worked by Duddle and Horrocks, the witness said the still was charged with about thirty tons of tar and oil. The oil had been left in from a previous working, and the tar was added. After the fire was lighted he saw Duddle, who said the still was going on all right. From the time the fire was lighted he should have expected to see a little water and an oily substance coming from the condenser in about an hour and a half. If nothing showed in about two hours, Duddle should have made an examination with a view to seeing what was wrong. He thought the cause of the explosion must have been a block in the coil, or in the pipe leading from the still. Two hours' boiling would have been sufficient to blow the cylinder top off if there was a block. He was certain that no cold liquid was run into the still just before the explosion, as he found all the taps closed. The top of the still was blown away from the bottom, and found in an adjoining yard, about thirty yards away. It had gone over a wall nine or ten feet high. He could not say whether the safety valve was in working order, because it was carried away by the force of the explosion, and had not been seen since. He had seen stills that had been blown up owing to the worm getting blocked. He had had no accident during the thirteen years he had been with Mr. Lockwood, but he remembered a still exploding at an adjoining works some time ago, and a man being killed.

By a Juror: If the taps were open to the still when the supply pump was pumping oil to load barrels, oil would be liable to go into the still at a considerable pressure.

By Mr. Rogers: He did not remember anything getting into the still in question by reason of the pump taps being accidentally left open. Duddle was an experienced man, and the management of the working of the still was left entirely to him, without any supervision. They took no steps to find out whether the worm was clear prior to beginning an operation.

By Mr. Rylands: Four taps had to be turned on before any liquid could be delivered from the pump into the still, and after the explosion he found three of the taps turned off.

Eli Dyson, manager of a branch works belonging to Mr. Lockwood, said he agreed with the evidence given by last witness. He was of opinion that the explosion was due to a stoppage in the pipe between the still head and the condenser. The block could have been discovered before the explosion.

Richard Jobey, another stillman, deposed to there being three feet of oil in the still in question at five o'clock on the morning of the 17th inst. He looked at the worm, which seemed to be clear.

By Mr. Rogers: They did not look to see if the worm was all right before commencing to distil.

Mr. Porter, replying to the Coroner, said he had found nothing unusual in the conduct of Mr. Lockwood's works. He had had nothing to object to, and had received no complaints from the work-people.

At the conclusion of the evidence the Coroner said if the jury were satisfied that the explosion was due to a sudden blocking of the worm, which could have been discovered by Duddle, they could not say that it was anything but an accident.

The jury returned a verdict of accidental death, and expressed the opinion that the explosion was due to a sudden stoppage in the worm of the still.

The Coroner suggested that Mr. Rogers might make some suggestion so as to prevent a similar accident in the future.

Mr. Rogers said he would make some recommendations, but they would be in the direction of seeing that the pipes and passages were clear before the commencement of operations.

The Coroner remarked that it was not sufficient to say to men that they must do this or that; it was better to require them to make an entry in a book certifying that they had done it.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

- Rotary Pumps, Blowers, &c. A. H. Reed and H. J. Sanderson. 14,371. June 14.
 Apparatus for the Manufacture of Acetylene Gas, Hydrogen Sulphide, Carbon Dioxide, &c. A. J. Boulton. 14,406. June 14.
 Utilizing Slag Industrially. T. Arnold. 14,417. June 15.
 Improved Alloy. O. Herrmann. 14,367. June 16.
 Treating Ores, and Apparatus therefor; also Applicable to the Treatment of Sewage. J. Poole. 14,375. June 16.
 Treating Spent Oxide and obtaining Products of Commercial Value. A. S. Bower. 14,662. June 17.
 Manufacture of Nitrocellulose. A. Liedbeck. 14,690. June 17.
 Improved Manure. E. Edwards. 14,695. June 17.
 Coating Metals by Electro Deposition. G. H. Nash. 14,703. June 17.
 Coating Metals by Electro Deposition. G. H. Nash. 14,709. June 17.
 Distributing and Oxidizing Sewage over Filter Beds. W. Sykes. 14,817. June 18.
 Obtaining Boracic Acid from Crude Borates. C. C. Moore. 14,836. June 18.
 Improvements in Treating Rhea-grass. J. M. Macdonald and H. H. Boyle. 14,865. June 19.
 Improvements in the Purification of Water. J. O. Braithwaite. 14,895. June 19.
 Substitute for Leather and Indiarubber. P. Reidel and E. Kuhn. 14,911. June 19.
 Improvements in Filters. R. Kurka. 14,933. June 19.

ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

These abstracts are specially prepared for the Chemical Trade Journal, and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.

- Improvements in the Process of, and Apparatus for, Deodorising Oil. J. R. Whiting, Stamford, Connecticut, and W. A. Lawrence, Waterville, State of New York. Eng. Pat. 10,526. April 27, 1897.

The lighter products of the distillation of coal, or petroleum, even when refined for use in the arts, often have an objectionable smell. To remove this, the gasoline, etc., is treated in the following manner. It is first vapourised, by being passed through a perforated pipe in small streams on to a coil of piping heated with steam. The vapour then passes up a column packed with bone charcoal, on leaving which it finds its way through a cylinder nearly filled with lime water. It collects at the top of this cylinder, and is carried off to a condenser. There is one drawing showing the general arrangement of the plant. The charcoal tower is fitted with perforated division plates, to prevent the charcoal packing too tightly by its own weight. The temperature of the water in the condenser should not be allowed to exceed 55° F.

It is claimed that by this treatment the product is obtained in an odourless state, and is therefore enhanced in value as a solvent and for kindred uses.

- A Method and Apparatus for Treating the Air in Mines, in Order to Control Noxious Gases. J. D. Williams and L. D. Gibson, both of Albert St., Creswick, Victoria, N.S.W. Eng. Pat. 10,385. April 26, 1897.

The inner workings are divided into a series of locks, by devices which are illustrated, and air is forced into each of the locks up to a reasonable pressure, which is sufficient to keep back foul gases, but not inconvenient to the workers. From time to time a certain amount of the air is allowed to escape, during the passage of trucks, from one lock to another. Special avenues, provided with automatic valves, also ensure the air being allowed to escape when the pressure rises too high. The constant pressure to be maintained depends upon the mine, and also the weather and barometric pressure. When passing from lock to lock, a system of valves and levers enables one man to equalise the air pressure, and to open and shut the lock doors. That portion in which foul gases are exuded is in this way cut off from the open parts of the mine, while the workers are supplied with good air, and the exudations checked by the maintenance of a reasonable pressure.

- Manufacture of Improved Fertilized and Fertilizing Materials. C. H. Thompson, East Cliffe Teignmouth. Eng. Pat. 9,704. April 15, 1897.

Peat moss, sponge clippings, coconut fibre, sugar cane refuse, sawdust, or other suitable absorbent is impregnated with fertilising materials, to form a substitute for earth, in which plants of all kinds can be grown. About 60 gallons of water are put into a boiler, and in this 4 ozs. each of phosphoric acid, pearl ash, and sodium nitrate are dissolved. The boiler is provided with a false bottom, and into this 7 lbs. of soot, 8 lbs. of raw gypsum, and 10 lbs. of crushed bones are placed, after being mixed into a paste. The false bottom is then

lowered into the liquid just mentioned, and the boiler filled with the moss or other absorbent. The water is raised to boiling point, and allowed to boil from twenty minutes to half-an-hour, being well stirred with a rod. When sufficiently boiled, the moss is taken out, and the excess liquid removed by pressing, or a hydro-extractor. The liquor is put back into the boiler, made up to 60 gallons again, and the above process repeated twice. The mixed batches of moss are fermented in a pit, care being taken by means of a bottom heat thermometer, to keep the temperature under 130° F. Yeast is added if the fermentation does not proceed fast enough.

The liquid fertiliser is made in the same way, and from the same ingredients used in preparing the liquid for impregnating the peat moss, &c., only different proportions are used. To the liquor thus made, 3 lbs. of pearl ash, 3 quarts of brewers' yeast, and about 2 lbs. of sugar are added to every 200 galls., and the whole fermented. Instead of soot, gypsum, and bone meal, certain chemical preparations, intended to represent the chemical composition of these materials, may be substituted, as, for example, in the case of bone meal, a mixture of 33% gelatine, 57% calcium phosphate, 4% calcium carbonate, and 3% each of magnesium phosphate and salt, may be used in lieu of the bone meal.

- Improvements in the Manufacture of Zinc Pigments. A. M. Clark, 53, Chancery-lane, W.C. (communicated by Drs. W. Hampe and C. Schnabel, of Clausthal, Hanover). Eng. Pat. 17,031. July 31, 1896.

Advantage is taken of the two facts that zinc oxide can be coloured with certain metallic oxides and also that zinc sulphate heated to a given temperature with carbon, produces zinc oxide. Thus a quantity of the sulphate of the colouring metal, such as sulphate of nickel, cobalt, manganese, or iron, is dissolved in four times its weight of water, and to this crystallized zinc sulphate is added. The solution is evaporated and the sulphates dehydrated. The mixture is then combined with finely comminuted carbon and heated to 650° C. It has been found advantageous to allow the oxides to continue to glow at a low heat in a current of air, after the disengagement of the sulphur dioxide has ceased. A special method of purifying the zinc sulphate used is described, the purified salt being preferable when very delicately tinted pigments are to be prepared.

- Improvements in the Treatment of Solutions of Ores containing Zinc for the Recovery of Zinc as Oxide. A. M. Clark, 53, Chancery-lane, W.C. (communicated by E. A. Ashcroft, Newcomen-street, Newcastle, N.S.W.). Eng. Pat. 16,312. July 23, 1896.

The zinc is dissolved out of the ore with sulphuric acid at a temperature of 80° to 100° C., the solution being brought to a strength of about 200 grms. per litre. Two grms. of zinc oxide for every gm. of zinc in solution is then added while still hot, and the whole mixed in a grinding pan. In a short time the mixture becomes pasty owing to the formation of basic salts and the absorption of water. The pasty mass can now be converted into oxide in one of two ways:—it can be heated in a muffle furnace to a temperature that will drive off the sulphurous acid, the gases being collected and utilized for the production of fresh vitriol, or the mass can be mixed with fine carbon when the decomposition takes place at a lower temperature, in fact the mixture is only heated to a point a little below the melting point of aluminium. The gases evolved are treated as in the first case.

- Improved Process for the Purification of Spent Lyes. C. H. Simpson, Calder Soap Works, and F. H. T. Allan, Portobello House, both of Wakefield, Yorks. Eng. Pat. 16,129. July 21, 1896.

Spent soap lyes are electrolysed in suitable apparatus with a current of not less than 2½ volts, as a general rule, though in some cases a weaker current is permissible. In this way the lower and less stable compounds of oxygen and sulphur are oxidized, while the arsenic and various organic impurities present are precipitated. The lyes so purified can then be more easily treated in the usual way and purer glycerine obtained. It is generally preferable (but not essential) to neutralize the lyes with mineral acid or a fatty acid before subjecting them to the electric current, the neutralization being accelerated by passing the lyes and acid through a centrifugal or other mixing apparatus.

CHANGE OF ADDRESS.—The Iron and Steel Plant Co., Ltd., advise us that they have removed from 3, Crown Court, Old Broad-street, to larger offices at 10 and 11, Austin Friars, London, E.C. No stocks will be held in London, however, the arrangements regarding these remaining as heretofore.

FATAL BOILER EXPLOSION.—A boiler explosion occurred last Sunday in a new petroleum refinery in the suburb of Rogau, Silesia. The building was completely demolished. Two engineers and three engine fitters were killed on the spot, and three engine fitters were severely injured.

ANALYSIS OF PHOSPHOR BRONZE.

BY M. WICKHORST.

DETERMINATION of Phosphorus Alone.—The following is a method which may be used where phosphorus alone is wanted, in phosphor bronze, phosphor copper, phosphor tin, etc.

Treat one gramme of the sample with twenty cc. aqua regia, consisting of fifteen cc. nitric acid and five cc. hydrochloric acid, and warm. When the reaction is complete, add water, then excess of ammonia, and make up to 200 cc. Pass in hydrogen sulphide until the copper, lead, etc., are all precipitated, and filter. To 100 cc. add ten cc. of magnesia mixture and ammonia in the usual manner. The phosphorus in the metal has been oxidised to the pentoxide by the aqua regia, and it is here obtained as the usual magnesium ammonium phosphate precipitate. After a few hours, filter off the precipitate into a Gooch crucible, and wash with diluted ammonia water, containing a little ammonium sulphide. Dissolve the precipitate in a little dilute hydrochloric acid, add a little magnesia mixture and reprecipitate with ammonium hydroxide. Collect on a Gooch filter, ignite, and weigh. From this calculate the phosphorus. For most purposes the double precipitation may be dispensed with, and the first precipitate ignited and weighed.

Complete Analysis of Phosphor Bronze.—Treat one-half gramme of borings with five cc. of strong nitric acid, applying heat. After the reaction is over, rub the residue well with a rod, add a little water, filter off the residue on a nine cm. filter and wash with water containing a little nitric acid. Put the moist filter with contents into a weighed porcelain crucible, apply heat, at first very gently, and finally with a blast-lamp. The weight of the residue gives stannic oxide plus phosphorus pentoxide. Fuse the residue with one-half gramme of sodium carbonate and one gramme of sulphur, with cover on the crucible. Heat with Bunsen burner until excess of sulphur is all driven off. Allow to cool and dissolve the mass in hot water, add excess of ammonia, then one gramme of ammonium chloride, and when cold precipitate with magnesia mixture. Collect the precipitate in the same manner as above, dissolve in a little dilute hydrochloric acid, add ammonia and magnesia mixture, and re-collect and weigh the precipitate. This gives magnesium pyrophosphate, from which calculate phosphorus.

To obtain tin, calculate magnesium pyrophosphate to phosphorus pentoxide, subtract this from stannic oxide plus phosphorus pentoxide. This gives stannic oxide. Calculate this to metallic tin.

However, by the treatment of the bronze with nitric acid, the phosphorus is not all rendered insoluble in combination with the tin. A little of it goes into the filtrate, and in order to get this phosphorus, a duplicate sample may be weighed out with the first, treated in the same way and filtered. The filtrate is precipitated with molybdate solution, and the phosphorus determined in this by one of the usual methods. This phosphorus is added to that obtained above.

Frequently the tin and phosphorus are found together as above, and the phosphorus determined in a separate portion of the sample. This is then calculated to phosphorus pentoxide, which is subtracted from the stannic oxide plus phosphorus pentoxide to give stannic oxide. But such a method causes result for tin a little too low, because, as explained above, the phosphorus is not all retained by the tin.

To the filtrate, from the stannic oxide plus phosphorus pentoxide, add ammonium hydroxide until just about neutral, then add 5 cc. nitric acid, make up to about 150 cc. with water, transfer to a large platinum dish and suspend in this a platinum foil about 2 inches square. Pass electric current through so as to precipitate the lead as dioxide on the dish, and the copper as metallic copper on the foil. Test whether action is complete by taking out a drop and treating with ammonia. If no blue colour develops, the copper is all precipitated, and so also the lead, as its precipitation is complete long before all the copper has come down. Siphon off the liquid from the precipitates, pouring in fresh water meanwhile, until most of the acid is gone. Then disconnect the current and wash the precipitates well with water. Dry in an oven and weigh. This gives metallic copper direct, and the lead can be calculated from the lead dioxide.

The liquid may still contain iron and zinc. To determine these, warm the liquid somewhat, add an excess of ammonium hydroxide and then ammonium sulphide. Allow to stand in a warm place until the precipitate has all settled, collect the precipitate on a small filter, ignite in a porcelain crucible, very cautiously at first, and finally with a blast lamp. This gives ferric oxide and zinc oxide. Dissolve the ferric oxide and zinc oxide in hydrochloric acid, add water, heat, precipitate with ammonium hydroxide, collect ferric hydroxide, and calculate to metallic iron. Subtract ferric oxide from ferric oxide plus zinc oxide. This gives zinc oxide. Calculate to metallic zinc.—*Four. Am. Chem. Soc.*

EXHIBITS AT THE ROYAL SHOW.

MACHINERY AND IMPLEMENTS.

(Concluded from page 431, Vol. XX.)

BEFORE continuing our notes on the machinery exhibits, there are three stands of a miscellaneous nature to which it will be best to refer at once. The first is that of MESSRS. PILCHERS, LTD., Tooley-street, London, who, as usual, make a good show of paints and pigments of all shades, and varnishes. Brushes and such-like accessories also form part of *le tout ensemble*. A feature of the exhibit that should be mentioned separately is their patent tarpaulin dressing. A related exhibit is that of the YORKSHIRE VARNISH CO., LTD., Ripon, who have a neat display of varnishes and colours for coach builders and general decorative purposes. The third and last of these three is the DEE OIL CO., LTD., of Saltney, Chester, who, in addition to a full display of their lubricating oils and greases, made a feature of candles. Their Salvo Petrolia—a superior vaseline—is also a noteworthy item in this exhibit.

OIL ENGINES.

A walk round the section devoted to machinery in motion brought home to the observer how fast these engines were increasing in the variety of make and popularity. At least ten firms were making a speciality of oil motors. As several of these motors embodied decided improvements, and some were entirely new makes, we have made arrangements to continue the series of articles on "Modern Oil Engines" that was running in these columns in 1895. The chief feature in this line and one of the novelties of the show was the oil-driven traction engine built by MESSRS. R. HORNSEY AND SONS, LTD., Grantham, which is, we understand, the first engine of this type that has ever been built. It was awarded the silver medal. Any ordinary petroleum can be used, but preference is given to Russian oil, on account of its more constant quality and evenness of composition.

MESSRS. ROBT. STEVENSON AND CO., LTD., of Newcastle-on-Tyne, made a good show with their "Rocket" oil engines, varying in size from 7 to 25 horse-power.

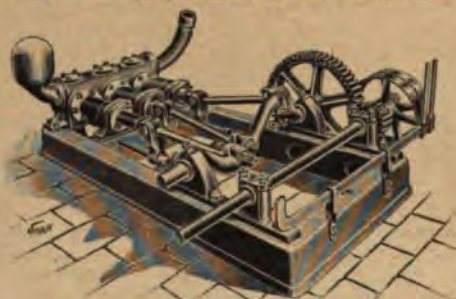


The engines (one of which we illustrate) were shown driving pumps and grist mills, and, by the firm's catalogue, we observe that a large number have been sold for working pumps in mines, at mansions and waterworks, and for driving electric lighting plant, thrashing and grinding mills, circular saws, hauling machinery, &c.

The engine works on a sound mechanical principle. In the construction due regard has been paid to durability, combined with simplicity throughout, as all the working parts are readily accessible, and so arranged that persons without mechanical knowledge can clean and keep the engine in order.

A visit to the stand could not fail to convince sceptics that the "Rocket" oil engine possesses a high place amongst prime movers, as the engines were running with smoothness and precision.

The horizontal Treble Ram Pump (likewise illustrated) was at work pumping water in front of the stand, and was well worth inspection. It is well designed and proportioned, and the construction and finish



are excellent. The standard sizes manufactured are suitable for water works, collieries, or mansions, and orders have been received from many of the principal coal owners in the kingdom.

But while engines and pumps may not be attractive to all visitors, as above by no means exhausted the objects of interest on the stand.

more comprehensive history of the locomotive could hardly be compiled than the gallery of photographs exhibited by Messrs. Robt. Stephenson & Co. Ltd. From the famous "Rocket" the improvement in locomotive engines is shown step by step. There are also photos of warships in course of construction, steamships for more peaceful commercial pursuits, auxiliary machinery for vessels, hauling plant, rock drilling machinery, &c., for which the firm have a wide reputation.

THE WAREDALE IRON AND COAL CO., of London, Durham, and Manchester, had an extensive and brilliant display of iron and steel samples, some of which were splendid examples of the twisting tests that steel is capable of. Their "Waredale" blast furnace coke and "Tudhoe Crown" bars, angles, and tyre iron were also conspicuous. In the centre was a case illustrating how the quality and suitability of various pig irons may be gauged from the fracture of the pig.

MESSRS. SCHAFFER AND BUDENBERG, Manchester, made a good show with their specialties, which comprised pressure and vacuum gauges, indicators, stop and relief valves, steam cocks, injectors, lubricators, together with a number of sectional models. These specialties are of their latest improved types, and are adapted for all classes of steam users. They are presented with much confidence, having regard to the successful records which the firm are able to produce as the outcome of service under varying conditions.

MESSRS. F. REDDAWAY & CO. LTD., Manchester, showed specimens of their well-known brands of hose and belting. A special feature was a length of their "Sphincter-grip" hydraulic hose, "Hercules" brand, attached to a pump, and which they had tested to the exceptional pressure of over 7,000lbs. per square inch. They showed a large variety of "Sphincter" hose, up to 15in. diameter, hydraulic hose 1½in. to 1¼in. diameter being also a noticeable feature. A hose-piece is exhibited, armoured with hard steel, to stand over 8,000lbs. pressure. In their

three speeds of delivery. Even in the slowest of these three (which gives a very thin stream of slag) the distribution is as perfect as in the faster and larger deliveries. The suspension wheels are also of a new type.

THE FLEXIBLE METALLIC TUBING CO. LTD., London, made a good show with their tubing in all sizes. Their connections and tubing are equally suited for high pressures, steam, water, gas, oils, or tar. The flexible bronze tube has also many advantages for mining purposes. During some pumping operations carried out in the Veronniere Mines, in France, some time ago, the following tubes were used: four 6 ft. lengths of 1½ in. bronze; one 6 ft. length of 2 in. steel, for exhaust; and four 5 ft. lengths of 4 in. steel, for connections. These connections on the pump gave excellent results. Firstly, in greatly reducing the time ordinarily required for shifting and lowering pumps, and consequent reconstructions, especially in sloping and crooked galleries. Secondly, in completely taking up all jar or vibration, and keeping the same off steam pipes or rising main, however much the pump rocked.

MESSRS. WM. JOHNSON & SONS, of Armley, Leeds, were working a new ore and stone crusher, and also a pneumatic separator, both of which were entered as new implements. We noted that a 12 in. x 6 in. crusher had been sold from the Show to Messrs. Mear & Green, the borax manufacturers, of Kidsgrove. Both these machines will be dealt with at length in a subsequent issue.

H. P. SAUNDERSON, of Bedford, had an enclosed shaft and safety clutch entered in the new implements. It is intended for the direct transmission of power. It revolves within a tube and so is perfectly safe, there being nothing which can entangle itself in anything. For transmitting power derived from horses or wind it will be found particularly useful, as there are no belts to slip off through irregular motion. The firm also show wind motors, and their mowing machine



BASIC SLAG SPREADER.—MESSRS. SARGEANT AND CO., LTD., NORTHAMPTON.

"Camel" brand belting they had a roll 60in. wide, and just short of two tons in weight; and broad coal-carrying belts, 50in. 10-ply, of the "Crocodile" brand, were shown.

THE LANCASHIRE PATENT BELTING AND HOSE COMPANY, Manchester, had specimens of their specialties in belts and hose on view. These included a series of endless "Lancashire" belts for threshing machines, portable engines, baling presses, &c.; rolls of "Lancashire" belting suitable for all classes of driving, and which is unaffected by heat, water, steam, or acids, and runs absolutely true and steady; an elevator belt, suitable also for light driving.

THE CRANSTON ENGINEERING WORKS, LTD., Hemel Hempstead, included in their varied exhibit paint mills for small or large quantities, putty mills, and also an edge runner for hand or power. The putty mill was intended for power, and mixed 5cwft.

MESSRS. BLACKSTONE & CO., Stamford, whose stand adjoined the Cranston firm, had oil engines at work, which will be dealt with in turn in the series of articles previously referred to. Their exhibit also included several electrical items of interest, such as a storage battery capable of maintaining fifteen 16-c.p. lamps for nine hours at one charge, this battery having been made by The Chloride Electrical Storage Syndicate, of Clayton, Manchester. The Walsall Electrical Co. also showed a dynamo and a switch board of enamelled slate.

MESSRS. SARGEANT & CO. LTD., Northampton, had a new basic slag spreader, entered for competition among the new implements. The special feature of this spreader is the side delivery. The feed is very well distributed, and very regular. A general view of the implement is given above. Apart from the novelty of the delivery, which overcomes the old difficulty of choking the feed with the coarse particles that have escaped grinding, the spreader is fitted with a special regulator, which by the simple movement of the hand-lever on the right, gives

attachment that was awarded a R.A.S.E. silver medal at Leicester last year.

MESSRS. WM. NICHOLSON & SONS, LTD., Newark-on-Trent, in addition to a large collection of general agricultural implements, were showing their "Hercules" bone mill and disintegrator, a bone and coke crushing mill, and also a coke breaker.

MESSRS. NEWTON CHAMBERS & CO., LTD., Thorncliffe, Sheffield, showed their "Izal" disinfectants, and "Noxonia" sheep dips at stand No. 17, while at stand No. 148 Thresh's steam current portable disinfector was to be found among a large collection of garden rollers, vases, greenhouse requisites, feeding troughs, grates, and hot water fittings.

MESSRS. W. R. DELL & SONS, London, had their Plansifter for flour and other granular materials on view, but we did not notice their packers, to which reference was made in the *Journal* a short time back.

F. NELL, London, introduced an old friend in his "Victor" turbine. The other items in the exhibit were triplex power pumps, the "Still-well" heaters, and lime extractors and boiler feed pumps.

MESSRS. HODGSON AND STEAD, Salford, showed a number of weighbridges for waggons and cattle, also weighing machines for packed or loose produce. These ranged gradually downwards, through a portable machine weighing half a ton, down to scales and counter weighing appliances.

HAWKSLEY, WILD AND CO., Sheffield, trusted chiefly to their boilers, feed water heaters, and hydraulic flangings, but also showed a pair of their patent filters, capable of filtering 600 to 800 gallons of water per hour.

THE CANNON HOLLOW-WARE CO., LTD., Bilston, Staffs., have two exhibits, one representing the various types of grindstones manufactured by them, and the other embracing examples of their productions in "porceliron." As regards the grindstones, particular

attention is directed to the "Climax," which has been designed to meet the requirements of engineers; the "Universal," which is suitable for general tool-grinding; and the "Standard," for lighter classes of engineering work. The "porcelain" goods include milk-pans, and dog and poultry troughs. These utensils, being smoothly cast and thoroughly coated with enamel, should find favour both in the dairy-farm and in domestic use.

THE BARRHEAT-STANGE PATENT BARREL SYNDICATE, LTD., of London, showed a collection of their patent steel barrels, ranging in size from 30 up to 120 gallons. They likewise exhibited brass bung taps of various sizes.

This brings us to the end of the exhibits of general interest, if we take the comparatively confined view of our scope that the limitations of space render imperative. We should, however, add that there are thirteen exhibits to be dealt with yet, that have been reserved for more extended treatment than is possible in a review like the foregoing.

THE SALFORD SEWAGE CASE.

ON Monday, at the Salford County Court, His Honour Judge Parry had before him the application of the Mersey and Irwell Joint Committee for the issue of a peremptory order against the Salford Corporation, to compel that body to carry out the scheme ordered by the Local Government Board for dealing with the effluent from their sewage filtration works. Mr. Sutton appeared for the Joint Committee, and Mr. Brown (Town Clerk) represented the Corporation.

Mr. Sutton explained what had been done in respect of the scheme since it was last brought under the notice of the Court in 1895. The point to which he directed attention was that in October last the Local Government Board required the Corporation to provide 100 acres of land in addition to the land which they were already in possession of, for the purpose of dealing with the effluent from their filtration works. The Board refused to receive any deputation from the Corporation on the matter, and finally confirmed their previous demand as to the provisions which should be made by the Corporation. That body, however, was not satisfied with the decision of the Board, as they wished to carry out their scheme without providing any additional land. At first, Mr. Sutton continued, the Joint Committee were not desirous of putting any pressure on the Corporation, but it was recognised that after all the delay which had taken place something had to be done. Accordingly, in April last, a letter was sent to the Corporation, and the Joint Committee afterwards received a communication from the Town Clerk. With the communication was enclosed a report, which had been drawn up by Mr. Carter Bell, the borough analyst. The report set forth that the experimental work of filtration was being carried on with success, and that it was thought the Corporation could produce an effluent which would be quite satisfactory, by extending the area of filtration, without purchasing additional land. But, Mr. Sutton proceeded, those experiments concerned only a small portion of the total amount of the sewage effluent, and no change had been made in the treatment of the bulk of the sewage since 1895, when the matter was before the Court. Proof was given to His Honour's satisfaction on that occasion that there was a danger of secondary decomposition in the case of an alkaline effluent, and that when such an effluent went into the Ship Canal it sank to the bottom. In May last the Corporation informed the Committee that they were not going to buy additional land, but were prepared to double their area of filtration. In consequence of this deadlock, the Corporation refusing to buy additional land and the Board refusing to give their sanction to a scheme which did not include such a purchase, the Corporation went on polluting the Irwell and the Ship Canal in the same way as they had been doing two years ago. It was impossible that they should be allowed to persist in that course, though at the same time it was unfortunate that conditions should be attached by the Board to which the Corporation could not accede. No opinion was expressed by the Committee as to the relative merits of the scheme of the Board and that of the Corporation, but the Board would not give way, and its scheme, indeed, was desirable.

The Judge said he thought he had to consider two important points—the necessity of the scheme and the practicability of obtaining the land.

Mr. Sutton, in reply, said the land could be obtained, as the Corporation possessed 30 acres at Mode Wheel, 37 acres at Irlam, and in the same neighbourhood an additional 30 acres could be acquired. The effluent could be carried by means of pipes for the purpose of being treated there over land. That was simply a question of cost, and in consideration of these facts the Joint Committee asked for a peremptory order.

The Judge asked what was meant by "peremptory?"

Mr. Sutton explained that it was desired that a time should be fixed for compliance with the order of the court.

The Judge: Supposing that is not done, what must be done then?

Mr. Sutton: I shall apply for penalties.

The Judge observed that in that case Mr. Sutton would be as far off as ever from obtaining what he desired.

Mr. Sutton did not think that. If penalties began to be imposed it would be found that the Corporation would do the work. That was the experience of the Committee in other cases.

The Judge asked if it could not be done without penalties?

Mr. Sutton thought there were other ways, but he did not think they would be as efficacious. All the Committee wanted was that the Corporation should do the work. An order might be made, if the Court took that view, requiring some person to do the work.

The Judge observed that the proceedings were taken for the purpose of getting the work done. He asked if it was not possible for the task to be undertaken by the Joint Committee, who could make a charge upon the Corporation. If he was given to understand that the scheme gave satisfaction to the very learned gentlemen who advised Mr. Sutton, he thought it would be quite possible to raise the money for the work without requiring the help of the Local Government Board. The Corporation appeared, during the last two years, to have been using their best endeavours to get a scheme which would have the result of stopping the pollution of the Ship Canal. He did not express any opinion with regard to the question of the acquisition of land. It seemed to him, however, unnecessary to burden the rates by the acquisition of land, as well as by the cost of the scheme itself, provided the experts of the Joint Committee were persuaded that the scheme of the Corporation was reasonable, and could be put into execution at a smaller cost than the scheme suggested by the Local Government Board. The purchase of unnecessary land would be a hardship on the ratepayers. If, however, an agreement could be come to between the Corporation and the Joint Committee, two persons might be appointed, one to represent the Corporation and the other the Committee, and they could act together for the carrying out of the scheme, and recover the sums expended from the Corporation in the County Court. Without suggesting for a moment that that proposal ought to be put into effect, he did think it ought to receive consideration before penalties were imposed upon the Corporation for refusing to purchase additional land.

Mr. Sutton explained that Mr. Scudder, the chemist, had informed him that the scheme of the Local Government Board was regarded by the Committee as the best. It was suggested by the Committee that a peremptory order should be issued requiring the work to be done without the condition attached, that if in a certain time the work was still incomplete penalties should be imposed, and the Court should appoint a person to do the work.

The Judge remarked that the effect of imposing penalties would simply be to transfer money from one set of ratepayers to another. He thought there was power under the Act for the work to be carried out in the way he had suggested.

Mr. Sutton said the Committee was not a body appointed to undertake such works; its duty was simply to see that the authorities carried them out.

Mr. Brown thought he could shorten the proceedings. Acting on the instructions of the River Irwell Committee of the Salford Corporation, he said he had withdrawn the application of the Corporation for the sanction of the Local Government Board, and told the Board of the intention of the Corporation to borrow money under section 235 of the Public Health Act, 1875, for the purpose of proceeding with their own scheme, as they could satisfy the Joint Committee by doubling the area of filtration without going to the length of purchasing more land. He was willing to agree to a peremptory order being made, if sufficient time was granted for the carrying out of the work. Counsel's opinion had been taken, and it was thought the money could be raised in the way suggested without the sanction of the Local Government Board. He would obtain as soon as possible a resolution of the Borough Council authorising the undertaking.

Mr. Sutton objected that the Corporation had no power to borrow money.

The Judge said the Corporation must be their own advisers. He would adjourn the case until the 22nd of July, and if then it appeared the Corporation was commencing to carry out the work, a further adjournment would be granted.

Mr. Sutton mentioned the question of costs.

The Judge said he was sorry for these continual adjournments, but they seemed to be unavoidable.

The application was formally adjourned until the 22nd July.

ELECTRO-CHEMICAL PROGRESS.—The Electro-Chemical Company, Ltd., of St. Helens, inform us that they are now making 70% caustic soda and 35/37% bleach. They also send us samples of their productions. It is, perhaps, too much to expect that their difficulties are all at an end, but the actual production of the full strength commercial articles would seem to represent a good many links in their chain of progress.

THE UTAH GUANO DEPOSITS.

A UNIQUE mining venture—the economic working of the only deposits of the kind north of the Equator—will soon be in progress on Great Salt Lake in Utah. Guano was discovered on Gunnison Island, in Box Elder County, Utah, in the winter of 1894-95 by A. Richter, George Payne, and T. G. Davis. Immediately on learning the value of their find they prospected all the islands and the shore line of the lake, desiring to have a monopoly of this product, if possible. Under legal advice they located twelve placer mining claims of 20 acres each; eight on Gunnison, two on Hat, and two on Davis Island, respectively, and these 240 acres embrace all the deposits of this valuable substance.

So soon as it became noised about, a party of jumpers filed a desert land entry on the Gunnison 160 acres and shortly afterwards the Southern Pacific Company set up a claim to the better part of the beds, alleging that the ground was within 20 miles of its track, hence in the limits of its land grant. Last winter a homestead entry was made on the Gunnison tract, which rounds out the list of claimants. The placer locators were poor men, but alert, and they succeeded in securing associates of means and enterprise to join with them and aid in protecting their rights. Within a few months of the first discovery the Utah Guano Company was incorporated with \$90,000 capital stock, in shares of \$1; the present officers being: Simon Bamberger, president; A. H. Cannon, vice-president; T. A. Perkins, secretary; W. S. McCornick, treasurer; A. Richter, general manager; these, with John Beck and W. C. Maginnis, compose the directorate.

The railroad has now abandoned its claims to title of the land, and in the district court at Ogden, on May 3, 1897, an order was entered making the temporary injunction, obtained by the Guano Company against the desert land filers, perpetual. At this hearing it was proven that these tracts are not farming land, hence there is no way in which title can be had to these deposits save as placers.

The all-important matter of title being thus settled the Guano Company speedily made preparations to mine its placer deposits, and to begin marketing its products this season. A contract was at once let for the building of a three-masted schooner, 400 tons burden, adapted for navigating this treacherous sea, to cost \$5,000, and to be launched early in July. A contract is practically closed for 6,000 tons for beet-sugar lands in California, which will compose the initial shipments.

Guanos are rated according to their nitrogenous and phosphatic contents. From parts of Chile, Peru, and the islands near by, where there is almost no rainfall, come the best of these fertilizers. Around Salt Lake there is considerable rain, and a larger portion of these soluble salts is leached out. Analyses show the Utah guano has about half the percentage of the soluble ingredients contained in the standard high-grade Peruvian, but the Utah product is said to be still worth \$40 to \$45 a ton in San Francisco. In thickness these deposits vary from 1 to 20 ft., and a recent estimate of the material in sight, after a very thorough examination, places the total at over 1,000,000 tons.

The origin of these deposits is similar to that of the Peruvian guano. Millions of gulls, pelicans, grebes and blue cranes have chosen these tracts for their nesting place. At times they cover the surface so that not a point can be seen save a broad carpet of live feathers, and when they rise on the wing they hide the sun completely. To-day it is impossible to step anywhere on the ground of the company without walking on eggs. Gulls' eggs are as large as hens' eggs, which they resemble in taste and flavour, while those of the other feathered denizens of these islands are not fit to eat. The pelicans destroy large quantities of fish from the streams that flow into the lake. In Great Salt Lake there are no fish, or anything else in the way of animal or vegetable life, with the single exception of a sort of a diminutive shrimp, colloquially styled the "Salt Lake Shrimp."—*Engineering and Mining Journal*.

THE PAPERMAKERS' AND PRINTERS' EXHIBITION.—The fifth international exhibition and market identified with the papermakers', printers', stationers', bookbinders', photographers', and allied trades was opened last week at the Agricultural Hall, Islington, by Sir Philip Magnus. The exhibition was of a very representative character, and proved of great interest to all connected with the trades named or in the development of the art of photography. At the inaugural luncheon, Sir Philip Magnus said that exhibitions were a prominent feature of the Victorian age. They had proved a great benefit, both educationally and commercially. On the one hand, they provided facilities for the student to examine the newest inventions and appliances; on the other, they brought the producer and the consumer together. One of the things which had struck him most in examining the condition of trade in foreign countries, was the value placed upon exhibitions of this class on the Continent, and the joy with which they were hailed by students. The exhibition remained open until the 30th ult. Messrs. W. E. Aylwin, A. T. Dale, and J. Reynolds were the managers.

Legal Intelligence.

HIGH COURT OF JUSTICE

QUEEN'S BENCH DIVISION.

(Before Mr. Justice Kennedy without a jury.)

COMMERCIAL CASES.

BERK AND CO. (LIMITED) v. DAY AND WHITE.

This was an action to recover damages for breach of contract. On December 11, 1896, the defendants entered into the following contract with the plaintiffs:—"We have this day sold you 1,200 tons ammonia alkali for shipment to France, reasonable notice of shipments to be given us. Price £2. 17s. 6d. per ton, f.o.b. Runcorn. Payment draft at one month against mate's receipt. Delivery in about equal monthly deliveries from February 1 to December 31 inclusive—Day and White." The conditions of sale included, among others—"each delivery shall be considered a separate contract and the failure of any delivery shall not vitiate the contract as to others." The defendants bought the alkali from the United Alkali Company (Limited), and their contract of purchase contained the same stipulation—that it was to be "for shipment to France." About March 24, 1897, the defendants delivered the first instalment, which was shipped at Runcorn on the *Val de Travers* for Treport. The plaintiffs gave their agents at Treport instructions that the alkali was ultimately destined for London, and that if the *Val de Travers* did not proceed to London it was to be trans-shipped and forwarded to London under bills of lading describing it as manure salt, &c., the object being to conceal from the Alkali Union that the plaintiffs were importing alkali. The *Val de Travers* proceeded to London, after touching at Treport, with the alkali on board consigned to the plaintiffs, who took delivery of it on behalf of the District Chemical Company (Limited), who had bought it from them. When the defendants heard of the ultimate destination of the alkali they refused to deliver any further instalments, alleging that the shipment to London was a breach of the contract with them, which was for shipment to France, and they also counterclaimed for damages.

Mr. Joseph Walton, Q.C. (Mr. J. W. McCarthy with him), for the plaintiffs, argued that there had been no breach of contract. The goods had been shipped to France, sold, and sent on to London. If the goods had been trans-shipped there the defendants could not have complained. Even if there had been a breach of contract with regard to the first instalment, that did not entitle the defendants to rescind the contract.

Mr. Lawson Walton, Q.C. (Mr. Scott Fox with him), for the defendants, argued that the defendants were not bound to supply goods to be dealt with in breach of the agreement. The plaintiffs had to show that they would accept delivery in terms of the contract. The object of the shipment to France was to prevent the alkali getting on the London market. The sellers wished to create a monopoly, and therefore made it a term that the goods should be exported. The defendants were justified in withholding delivery as the second instalment would have been subject to the same breach as the first.

Mr. Justice Kennedy, in giving judgment said:—"The plaintiffs did not know the precise terms upon which the defendants got the alkali, but they knew that there were certain limitations put upon merchants who sold alkali. When the first delivery came forward, trade considerations made it profitable to the plaintiffs to sell to a company having close connexion with the plaintiff company. The question was, Was what was done a shipment to France within the meaning of the contract? The destination of the stuff was London, and what was gone through was a mere form. He was of opinion that it was not a shipment to France. The goods were carried *via* Treport to London. That being so there could be no claim to damages on the contract. It was then said that each delivery was a separate contract. He did not think the contract was divisible. It seemed to him that, as the plaintiffs insisted doing what they had already done with regard to future deliveries, the defendants were right in saying that they were not bound by the contract. Judgment for defendants on the claim and counterclaim. Damages to be ascertained.

(Before Mr. Justice Hawkins and Mr. Justice Vaughan Williams.)

SALT UNION v. NORTHWICH SALT COMPENSATION BOARD.

This was an application on behalf of the Salt Union. Mr. Castle, Q.C., moved for a rule *nisi* calling upon the Northwich Salt Compensation Board to show cause why a writ of *certiorari* should not issue to bring up certain proceedings taken by them under the provisions of Section 23 of the Brine Pumpers' Compensation Act, and also a certain rate made by them and regulations which they had issued, which were *ultra vires* under the Act, and which, if there were to be any, ought to be in the form of bye-laws under another section of the Act. It appeared that considerable difficulty had arisen in consequence of pumping brine out from underneath the surface, and considerable subsidies had taken place in the district in consequence. In 1891 an Act was passed giving a right to certain persons who could prove injuries through these subsidies to recover compensation, and

the conditions was that they should have sent notice of their claim within six months. As soon as the Act was passed a sheaf of claims was sent in to the authorities for the time being, and then nothing else was done until 1896, when he supposed the claimants thought the Statute of Limitations might be set up against them. Accordingly they went to Parliament and got a provisional order constituting a Board, the Salt Compensation Board of Northwich, to enable them to act under the powers of the Act of 1891. This Board came into operation in November, 1896, and since that time they had broken every rule and every section within the Act. The Salt Union put themselves in communication with a gentleman on the Board, and pointed out the errors that had been committed, but they had always been met with the reply that the Board was a superior court. They asked the Board if they would agree to have a special case stated by counsel, but the Board said they were a judicial body, and as they had an Act of Parliament were going on that.—Mr. Justice Williams: Is this what you say—that this body has made some regulations; that those regulations not being made as bye-laws you have not the remedy which you would have if they made proper bye-laws? You say those regulations are improper regulations. You cannot appeal against the regulations as such to quarter sessions, and you therefore want to bring up these improper regulations by *certiorari* that they may be quashed here?—Mr. Castle said that was one of his three points.—Mr. Justice Hawkins: Is there any order at all in existence which you want to quash which directly affects your clients?—Mr. Castle said there were various orders which had been made upon them. By Section 27 the powers to be exercised under the Act were to be exercised in open court, but that had not been done, and they could not appeal where the matter had been dealt with in camera. He contended the Board had no power to make such orders and to deal with the claims behind their backs.—Mr. Justice Hawkins said they would grant a rule, but it must not be taken that they assented to the view submitted. Counsel might have great difficulty in getting the rule made absolute.—The rule was granted.

CHESHIRE QUARTER SESSIONS.

(Before Mr. H. C. Yates.)

APPEAL BY THE SALT UNION COMPANY.

This was an appeal by the Salt Union Company, Limited, against a rate levied by the Northwich Compensation Board. Mr. Castle, Q.C., with Mr. C. E. Wilbraham, appeared for the appellants, and Mr. E. H. Lloyd for the respondents. The case for the appellants was that the respondent Board had over-rated the Salt Union Company to the extent of £700. per annum, by adopting a wrong basis of computation. The Brine Pumping Compensation Act, which was passed in 1891, fixed as the maximum rate of compensation 3d. per thousand gallons of brine raised in the preceding twelve months. The Compensation Board, in administering the Act, computed that a thousand gallons of brine had to be pumped to produce a ton of salt, and this basis now formed the point at issue. The appellants submitted that the Board had taken it upon themselves to arbitrarily fix this figure, whereas by meter tests it had been ascertained that to make a ton of salt less than 800 gallons were necessary. In support of this contention, Mr. J. F. Fells, manager of the Cheshire branch of the Salt Union, Dr. E. Davies, analyst, Liverpool, and other witnesses were called.—The respondents contended that the basis of 1,000 gallons to the ton was fair and accurate, after due allowance had been made for the waste which ensued between the time the brine was pumped from the shaft and the final process of manufacture.—Sir Joseph Verdin, chairman of the Compensation Board, called by Mr. Lloyd, gave it as his opinion that, including waste and variation in saturation, 1,000 gallons would be necessary to make a ton.—This opinion was endorsed by Mr. Bowman, F.R.S.E. (Bowman, Thompson, and Co.), Mr. E. T. Ward, surveyor to the Northwich Compensation Board, and Mr. C. M. Blades, chemist, Northwich.—The magistrates held that the Compensation Board had not exceeded their powers, and dismissed the appeal with costs.

Trade Notes.

TO PREVENT EXPLOSIONS IN TANK STEAMERS—The importation of petroleum into Trieste in tank steamers has given rise to an Austrian Governmental inquiry as to the vapour of petroleum hanging about the tanks, and the dangers arising from the explosive mixtures to which it gives rise. The result is that a method has been adopted by which the air from various parts of the tank is extracted and subjected to a threefold test with a eudiometer to see whether there is any diminution of volume on explosion, with a Davy lamp to see whether the flame is altered by the suspected air, and with an open flame to see if it is inflammable, and, if so, what kind of flame is produced; and it is only when these three tests are satisfactory that a light can be allowed near the tank. Otherwise, ventilation must be vigorously carried out.

MESSRS. KYNOCH, LTD.—The report of the directors states that an interim dividend at the rate of 3½ per cent. was paid in December last on both the preference and ordinary shares of G. Kynoch & Co., Limited, and a final dividend of 6½ per cent., making 10 per cent. for the year, was in accordance with the reconstruction agreement, payable on June 30th to the shareholders who were on the register at the date of such reconstruction.

GUNPOWDER MONOPOLY IN SPAIN.—The Secretary of State for Foreign Affairs has received a despatch from Her Majesty's Chargé d'Affaires at Madrid, reporting that a law has been published in the official *Gazette* establishing a monopoly for the sale and manufacture of gunpowder in Spain. This monopoly will be submitted to public tender, 15 days' notice of which will be given in the Madrid *Gazette*. The minimum tender is to be 3,000,000 pesetas (£120,000.) annually, paid quarterly. Any further information that may be received can be seen at the Commercial Department of the Foreign Office any day between the hours of 11 a.m. and 6 p.m.

MIDLAND COAL MASTERS AND THE COMPENSATION BILL.—A large and influential meeting of South Staffordshire and Midland iron and coal masters was held at the Queen's Hotel, Birmingham, recently, Sir B. Hingley presiding, at which a resolution was passed in favour of a strong effort being made to obtain the limitation and modification of the new Employers' Liability Bill to prevent imposition on the part of workmen. In the course of discussion it was pointed out that if additional burdens were placed upon small colliery owners of South Staffordshire they would have to close their collieries, and this would mean that the Mines Drainage Board, which drew its income from the collieries, would have to cease work. This would result in the flooding of the whole of the collieries of South Staffordshire. Mr. Wilson Lloyd said the closing of the collieries in the Tipton district would result in a loss of no less than fifty million pounds sterling. Colonel Cochrane (chairman of the South Staffordshire Coal Trade) said if the Bill passed it would simply ruin such owners, the Chairman adding that it would result in the formation of "rings." All the large collieries would be bought up, while the smaller owner would go to the wall. In the end the resolution was adopted, and a suggestion was made that other Midland traders who are interested in coal and iron industries should be asked to join in the agitation against the Bill.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols are rather firmer, a change that is not very surprising, seeing there was no tangible reason for the sudden drop of last week; 90's are now quoted 2s. to 2s. 1d., and 50/90's 2s. 2d., at which prices considerable business has been done. Carbolic acids are irregular, and the nearest quotations are 2s. for 60% crude, and 7¼d. for 40% crystals. Liquid unchanged. Naphthas are about the same, with crude 11d., and solvent 1s. 6d. to 1s. 7d. Creosote is in good demand and firm in price. Anthracene unaltered. Pitch still keeps low, at 18s. to 22s., f.o.b. East Coast, but a rise ere long may be looked for, if the position counts for anything.

There is no cause to grumble about sulphate of ammonia. The market is steady on the whole, the forward section being more promising, while prices are well maintained. There might with advantage be a little more doing, but the firmness of prices in the comparative absence of business is a solatium in itself. Closing values are:—Beckton, £7. 11s. 3d.; London, outside makes, £7. 10s.; Liverpool, £7. 12s. 6d.; Hull and Leith, £7. 8s. 9d. to £7. 10s.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade there are no material changes in value upon record for the main products. Bleaching powder is brisk for prompt delivery, especially for shipment, and price is firm at £6. 12s. 6d. to £6. 15s. f.o.b., and £6. 7s. 6d. f.o.r. Ammonia alkali steady, at £3. 17s. 6d. per ton, bags, f.o.r. Leblanc ash nominal, at 1d. to 1¼d. per degree, f.o.b. For caustic soda recent quotations are: unaltered, viz.:—F.o.b. Liverpool, 77%, £9.; 74%, £8. 2s. 6d.; 70%, £7. 2s. 6d., 60%, £6. 2s. 6d., 10 ton lots and upwards. Chlorate of potash, 4d. per lb. Soda, 4¼d. per lb. Sulphur, £4. 12s. 6d. f.o.r. For saltcake there is a better inquiry, and price 19s. to 20s., f.o.r., in bulk. Soda crystals and bicarbonate are unaltered in price, and in good demand. Brown acetate of lime firm at £5., c.i.f.; grey, £8. to £8. 2s. 6d. per ton; all other acetates quiet. Sulphate of copper, £16. 5s., f.o.b. White powdered arsenic, £22. 5s., Garston. Potash, caustic and carbonate are slightly easier, but without quotable change meantime. Yellow prussiate of potash firm at 5¼d. Cyanide, 10½d. per lb. Sulphocyanides dull. Generally, demand for chemicals is quiet, and prices as a whole are depressed.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, 45s. 5½d. Scotch warrants closed at 45s. 5½d.; Middlesbrough, 40s. 9d. cash; and hematite, 48s. 6d. Copper firm: Chili bars, G.O.B.'s and G.M.B.'s, closed at £48. 17s. 6d. to £49. 2s. 6d. cash, and £49. 2s. 6d. to £49. 7s. 6d. three months. Tin steady: Straits closed at £62. 18s. 9d. to £63. 8s. 9d. cash, and £63. 8s. 9d. to £63. 18s. 9d. three months; Australian, £64. 10s.; English ingots, £66. 5s. to £66. 10s. Lead firm: Spanish, £12. 1s. 3d. to £12. 2s. 6d.; English, £12. 5s. Silesian spelter, ordinary, £17. 5s. Nickel, 1s. 2½d. Antimony, £30. 5s. Quicksilver: First hands, £7. 5s.; second hands, £7. 3s. 6d. Copper shares steady: Cape, 2½ to 2⅞; Copiapo, 2½ to 2¾; Libiola, 2½ to 2¾; Mason and Barry, 2½ to 3½; Rio Tinto, 2½ to 2⅞; Tharsis, 5¾ to 6¼.

GLASGOW, WEDNESDAY.—Market dull, and a small business. Scotch done at 45s. 6½d. to 45s. 6d. cash, and 45s. 8½d. to 45s. 8d. one month; buyers, 45s. 5½d. cash; sellers, 45s. 6d. Cleveland, buyers, 40s. 9d. cash; sellers, 40s. 9½d. Cumberland hematite done at 48s. 6½d. cash; buyers, 48s. 6d. cash; sellers, 48s. 7d. Middlesbrough hematite, buyers, 50s. 9d. cash; sellers, 51s.

REPORT ON MANURE MATERIAL.

Business continues to be very quiet, and any change in values is rather in favour of buyers. Raisers of 75/80% Florida phosphate rock having made extensive sales (mostly for the Continent), and available supplies being much reduced, are rather firmer in their ideas, although 5½d. per unit, c.i.f. to United Kingdom ports, would probably still be business for shipment up to spring, 1898. The quotation for Algerian and South Carolina rocks are as last reported. There is very little doing in bone meal either on spot or for shipment, but there are still sellers of ordinary Bombay in either position at £3. 10s. per ton. Nitrate of soda may be had at 7s. 4½d. per cwt., ordinary, and 7s. 6d. per cwt. for fine.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—The firmness of palm oil still acts as a check on sales, and practically the only business doing has been in Benin at £17. 7s. 6d. per ton, ex quay. Olive is only in limited demand, but prices remain very steady. Linseed is unchanged at 15s. 3d. to 16s. 6d. per cwt. for Liverpool makes, in export casks, and holders show signs of firmness at these figures. Cottonseed still remains steady at 15s. to 15s. 9d. per cwt. for Liverpool refined. Castor oil is steady and in better demand: Good seconds Calcutta are the turn easier at 3d. to 3½d., but first pressure French is dearer at 3½d. to 3⅞d. per lb. Tallow is firm, and unchanged. Holders of resin are firm, but the demand is perceptibly slackening, inquiry for spot being but moderate. Spirits of turpentine are in fairly good demand on spot at a decline to 21s. 3d. per cwt. Petroleum is quiet, with American 5¼d. to 7d. and Russian refined 5½d. per gallon.

CAKES.—Cakes are moving pretty well, this being the case more particularly with West American linseed, which now stand at £4. 17s. 6d. to £5. 2s. 6d. Liverpool makes are slower of sale at £6. 5s. to £7. Liverpool cottonseed are rather quiet, with decorticated at £5. 15s. to £6. 7s. 6d. and undecorticated £3. 8s. 9d. to £4. 5s. Egyptians are inclined to favour buyers, and are quiet at £3. 10s. per ton.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire, common, £10., medium, £12., best, £15, Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The expression of disappointment upon receipt of the news of the withdrawal of the North Eastern Railway Company's Dock Scheme to-day were very general. The effect of holidays here has dislocated trade a good deal, which would have been more felt but for the end of the half-year's contracts, those firms doing railway companies' business having been well employed. Linseed oil has improved in value somewhat, but closes quiet at present quotations, which are:—Spot, naked, 13s. 10½d.; forward, last four months, 14s. 3d. naked; Boiled and refined, £1. to £1. 10s. per ton extra. Refined cotton oil is quiet at 13s. 1½d., naked, spot; forward, Nov.-April, 13s. 7½d. Filtered-refined is about £1. extra. Crude, 12s. per cwt. Casks £1., and ordinary barrels £1. 10s. per ton extra. Turpentine, 21s. 6d. to 21s. 9d. per cwt. Oleines have gone a trifle cheaper, and are quoted £15. 15s. to £19. per ton for white re-distilled, c.i.f., Hull. Castor oil is quiet and unchanged. Olive oils are quiet, Candia and Malaga

are quoted £30. per ton. Olive oil soaps are in better demand, and quoted from £15. 10s. per ton for 60% fatty acids. Soft soap from £12. per ton. Cod oils, £16 to £18 per ton.

CAKES.—Linseed cakes firm, 95% pure, £6. 2s. 6d. to £6. 5s. Oilcakes, £5. 2s. 6d. to £5. 5s. Russians, £6. 5s. Americans, £5. 7s. 6d. to £5. 10s. Cotton cakes steady: best makes, £3. 10s. to £3. 11s. 3d.; seconds, £3. 7s. 6d. to £3. 8s. 9d. per ton. Rape cakes unchanged.

PAINTS.—The trade generally is well employed, completing their half-year's contracts. White and red leads unchanged. Dry Venetian red from £4 per ton. Ochres, dry, various, according to quality. Oxide of iron from £6. per ton. Ready mixed paints from £23. per ton. Cheap ordinary colours in oil from £10. per ton. Imperial black varnish £5. per ton, in barrels. Common oak varnish from 5s. per gallon.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

The position of sulphate of ammonia is perhaps a shade less promising than it was a week ago, but as regards prompt business the difference is not sufficient to warrant any change of figures in the quotation, £7. 8s. 9d. to £7. 10s. f.o.b. Leith being the nearest to exactitude that can be come at. Forward business October to December is said to have been done at £7. 12s. 6d.; July delivery has been done at £7. 11s. 3d. Makers are scarcely so high in their forward ideas as they were, £7. 15s. being now about the highest. Buyers are not at all easy to fix. In general chemicals there is a moderate bulk of buying and selling going on, but limited mostly to the needs of the hour. Borax remains weakly, but without any further drop in the figure. The others are unchanged, and reports as to requirements for shipment are of a satisfactory character. Mineral oils and paraffins idle and neglected at the old nominal quotations, but within the course of a short time makers will be meeting to decide on the prices for the new season.

Chief prices current are:—Soda crystals, £2. 12s. 6d., nett, Tyne, soda ash, 48/62°, £4. 2s. 6d. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £5. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 2s. 6d., 70/72° £7. 2s. 6d., 60/62° £6. 2s. 6d., and cream 60/62° £6., all nett, Liverpool; bleaching powder, 35/37°, £6. 10s. nett, Tyne; saltcake, 19s. to 20s.; borax, English, refined, £16. and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £8. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for Scotch and English deliveries (for export, 3¾d. nett, f.o.b. Glasgow); chlorate of potash, 4d. less 5%, any port; nitrate of soda, 7s. 6d. to 7s. 9d.; sulphate of ammonia, £7. 8s. 9d. to £7. 10s., prompt, f.o.b. Leith; salammioniac, first and second white, £33. and £31. nett any port; sulphate of copper £16. 5s. to £16. 10s. less 5% Liverpool; paraffin scale, hard, 1½d. to 1½d., and soft, 1½d. per lb.; paraffin wax, 120° semi-refined, 1¾d. to 2d. per lb.; paraffin spirit (naphtha), 6d. to 6½d. per gallon; paraffin oil (burning) No. 1, 6¼d., and crystal, 6½d., at Glasgow and other big centres, for Scotch buyers (English sales ½d. to ¾d. lower); ditto (lubricating) 865° £5. to £5. 5s., 885° £5. 15s. to £6. 5s., and 890/895° £6. 10s. to £7. Week's imports of sugar at Greenock were 2,466 bags and 50 casks beet refined, 11,337 bags beet unrefined, and 4,920 bags cane unrefined.

TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals show very little alteration, and the demand continues to be only moderate. 76/77% caustic is rather scarce for prompt, and price varies from £8. 15s. to £9.; for 70%, £7. 5s. to £7. 10s. per ton. Sulphur quiet at £4. 15s. per ton. Soda crystals, £2. 12s. 6d. per ton, locally.

Bleaching powder, softs, £6. 10s. per ton, nett; hards, £6. 15s. per ton, nett; caustic soda, 76/77%, £9. per ton, nett; do., 70%, £7. 10s. per ton, nett; recovered sulphur, 2 cwt. bags, £4. 15s. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. 6d. per ton, nett; do., 52%, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett. Hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett weight; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett weight; blanc fixe, £7. 5s. per ton, nett weight; chloride of barium, refined crystals, £6. 15s. per ton, nett weight; do., 90/95% crude calcined, £6. per ton nett weight; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT is fairly steady at 9s. per ton, f.o.b. Tees.

COALS.—Coal trade is fairly brisk, and there is a good demand for best steam and bunker qualities. Coke continues very scarce and in demand, many producers being sold up for some months ahead. Today's quotations:—Best Northumbrian steam, 8s. 6d. to 9s. per ton; second quality, 7s. 6d. to 8s. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; gas coals, 7s. 3d. to 7s. 6d. per ton; bunker coals, 7s. 6d. to 8s. per ton; coke, scarce, 18s. to 20s. per ton.

New Companies.

Gold Extraction and Bromine Recovery Company, Limited.—CAPITAL £500,000. in shares of £1. each. This company has been formed to acquire and work certain patents for the extraction of gold with bromine, and to adopt an agreement with Messrs. H. R. Cassel and B. C. Hinman. The subscribers to the memorandum of association are:—F. I. Ricarde-Seaver, F.R.S., 16, Grafton-street, W.; E. W. Richards, Low Moor, Bradford, Yorks., engineer; A. M. Fowler, M.I.C.E., 35, Old Queen-street, Westminster; E. L. Bristol, 1, Devereaux-road, Clapham Common, gentleman; C. Stockdale, Spring Lea, Leeds, gentleman; W. Farrow, 29, Franconian-road, Clapham Common, clerk; S. H. Master, 20, Barrowgate-road, Chiswick, W., gentleman.

Pure Acetylene and Carbide Company, Limited.—CAPITAL £120,000 in £10 shares, of which 8,000 are 6% cumulative preference. This company has been formed to manufacture and sell acetylene, carbide of calcium and other metallic carbides. The subscribers to the memorandum of association are:—R. Ainscough, Burscough, Ormskirk, miller; C. E. Talbot, 19, Castle-street, Liverpool, merchant; E. Paul, Brunswick-street, Liverpool, merchant; T. J. Roberts, Cowley-hill, St. Helen's, chemist; J. Nelson, 52, Argyle-street, Birkenhead, chemist; T. Keene, 9, Elgin-drive, Liscard, engineer; F. Dresser, Chorlton-hall, Chester, merchant.

Broughton Copper Company, Limited.—CAPITAL £238,000. in 68,000 preference shares of £1. each, and 34,000 ordinary shares of £5. each. This company has been formed to enter into an agreement with the company and A. Tongue, who is the liquidator of the Limited Company of the same name, incorporated in 1864, and to carry on the business of copper manufacturers, smelters, workers, &c. The subscribers to the memorandum of association are:—W. Sumner, Butt Hill, Prestwich, director; C. C. Dunkerley, 66, Port-street, Manchester, merchant; J. F. Sallon, 66, Denmark-road, Manchester, director; R. Knight, Albert-road, Altrincham, director; L. Sumner, Butt Hill, Altrincham, director; J. B. Mercer, Yew Bank, Lower Broughton-road, Manchester, salesman; G. W. Hale, Camp House, Broughton, Manchester, secretary.

IMPORTS OF CHEMICAL PRODUCTS

AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending June 19th.

Acetic Acid—
Holland, 21 pks. Little & Johnston
" 20 F. J. Putz & Co.
" 50 blns. J. Owen

Acetone—
Germany, 690 Matthews & Luff
France, 275 A. H. Wintergill

Alkali—
Germany, 1 ck. J. Barber & Co.
Canada, 127 c. " "
Germany, 201 Spies, Bros. & Co.
Belgium, 250 bgs. W. A. Davis

Alum—
Germany, 13 cks. Ohlen-
schlager Bros.

Antimony Ore—
Japan, 14 t. L. & I. D. Jt. Co.
Turkey, 100 J. Bamber
Italy, 20 Novelli & Co.

Arsenic—
Germany, 115 H. Lorenz

Asbestos—
Italy, 1450 Pickford & Co.
" 275 J. Coppo & Co.

Barytes—
Germany, 10 cks. E. J. Diggins
Holland, 110 W. Harrison & Co.
Belgium, 16 102 brls. J. L. Lyon
" 36 200 bgs. & Co.
Germany, 8 R. W. Greeff & Co.

Bone Ash—
Uruguay, 650 t. Anglo-Continental
Guano Works

Bromide of Iron—
Germany, 25 cks. A. & M.
Zimmermann

Bromine—
Germany, 20 cs. A. & M. Zimmermann

Camphor—
Germany, 119 W. H. Mitchell

Caoutchouc—
Germany, 25 c. L. & I. D. Jt. Co.
Spain, 12 Prop. Hay's Wf.
Madagascar, 60 Major & Field
Penang, 136 E. Boustead & Co.
Singapore, 21 Elkan & Co.
Germany, 2 Shaw, Adams & Co.
Madagascar, 50 Precter Bros.
U. States, 8 D. Currie & Co.
Sydney, 24 W. C. Bacon & Co.
Straits, 600 E. Boustead & Co.
Holland, 35 Prop. Bull Wf.

Carbonic Acid Gas—
Holland, 150 J. Barber & Co.

Castor Oil—
Ceylon, 100 cs. R. G. Hall & Co.
France, 15 brls. J. Greig
Belgium, 57 J. T. Morton

Caustic Potash—
France, 33 cks. H. Reid
Germany, 1230 J. M. Steel & Co.
France, 75 Petri Bros.

Chemicals (otherwise undescribed)
Dunedin, 180 L. & I. D. Jt. Co.
Germany, 245 " "
" 379 T. H. Lee
" 20 S. Norrueberg
Brisbane, 40 Parbury, Henty
& Co.

U. States, 53 W. Johnston & Co.
Holland, 23 Philipps & Graves
" 85 J. M. Steel & Co.
" 23 J. Boehm
U. States, 952 W. M. Smith & Sons
Germany, 20 Domeier & Co.
" 610 A. & M. Zimmermann
Queensland, 121 drs. L. & I. D. Jt. Co.

Norway, 19 cks. R. Greening
France, 62 Hernu, Peron & Co.
Holland, 13 Little & Johnston
" 65 C. Atkins & Nisbet
Belgium, 240 John Cockerill Line
U. States, 37 R. Thompson

Copperas—
Germany, 132 Burgoyne & Co.

Cream of Tartar—
Spain, 10 cks. B. & F. Wf. Co.
" 10 W. C. Bacon & Co.
France, 9 cs. C. Atkins & Nisbet
Italy, 21 Howard & Sons
France, 7 B. & F. Wf. Co.
Italy, 10 Fellows, Morton
& Co.

Holland, 9 Kirkpatrick & Co.
France, 5 M. Ashby, Ld.
Portugal, 12 F. Knowles & Co.

Dextrine—
Germany, 140 J. Barber & Co.
" 150 Hermann & Co.

Dyestuffs—
Annatto
France, 1 cs. B. & F. Wf. Co.
Denmark, 2 cks. M. D. Co.
Norway, 1 Johnsen & Jorgensen

Argols
Italy, 63 cks. Thames S. T. & L. Co.
Austria, 293 bgs. B. Jacobs
& Sons
Italy, 16 1,374 Bailey & Leatham

Gochineal
Germany, 5 bgs. A. Everingham
& Co.
Canaries, 15 Sperling & Williams

Cuteh
U. States, 200 bgs. Brown & Elmslie
Rangoon, 200 lbs. Union L. Co., Ld.

Diyl Diyl
E. Indies, 187 pks. Walker, Munie
& Co.

Extracts
U. States, 100 bgs. W. Burton & Sons
France, 50 cks. B. & F. Wf.
Co.

U. States, 16 pks. L. & I. D. Jt. Co.
France, 11 J. Harrison
Canada, 20 t. Furness, Withy
& Co.

Gambier
Singapore, 361 pks. Vokins & Co.
Straits, 238 bls. W. France
& Co.

Indigo
E. Indies, 14 cts. L. & I. D. Jt. Co.
" 9 Lewis & Peat
" 132 J. Finlay & Co.
" 34 F. Claydon & Co.
" 5 Arbuthnot, Latham
& Co.

Logwood
W. Indies, 2 t. E. D. & F. Man
Myrabolams
E. Indies, 2,000 pkts. A. B. Curtis
& Co.

Saffron
Spain, 1 cs. Prop. Midd. Wf.
L. & N. W. Rly.

Shumac
Italy, 400 bgs. Bevington & Sons
" 1,000 J. Kitchen
" 200 pks. W. Shelcott
" 25 Soundy & Sons

" 6,800 Ross & Deering
" 100 J. E. Scott
" 300 315 Bailey & Leatham, Ld.

Tanners' Bark
Durban, 23 t. Goad, Rigg & Co.
Adelaide, 59 Devitt & Hett
Sydney, 3 Dyster, Nalder
& Co.

Adelaide, 44 A. & W. Nesbitt
Valonia
A. Turkey, 147 t. Hicks, Nash & Co.
" 36 Adam Bros.
" 65 W. H. Mitchell
" 21 A. & W. Nesbitt

Farina—
Holland, 100 bgs. G. Hornzee
Germany, 50 J. Barber & Co.
" 100 R. Bennett & Co.
Holland, 30 J. Barber & Co.
" 110 H. Lorenz

Gambole—
France, 32 cs. Chapman & Anthony

Glucose—
U. States, 500 pks. 500 c. Bellamy's
Whf. Co.

" 500 J. Forsey
" 1,510 1,648 L. & I. D. Jt. Co.

" 250 250 Trier, Meyer
& Co.

Germany, 200 200
U. States, 200 1,150 Bennett S. S.
Co.

" 1,050 4,850 R. G. Hall
& Co.

" 1,000 1,000 Robinson,
Son & Co.

" 500 500 E. Thompson
& Co.

France, 200 200 W. E. Cole
U. States, 250 250 Knowles &
Padgett

" 1,000 1,000 Beresford
& Co.

Glue—
U. States, 150 Armour & Co.
France, 94 J. Harrison
Germany, 350 T. H. Lee

Holland, 300 J. Barber & Co.
" 45 G. Rahn & Co.
" 67 J. Barber & Co.

Guano—
Abrolhu, 400 t. W. Marden

Infusorial Earth—
Germany, 50 t. A. Haacke & Co.

Lead Acetate—
Germany, 14 cks. Beresford & Co.

Manganese Ore—
Japan, 200 t. H. Hesse

Manure—
Uruguay, 21 t. Anglo-Contl. Guano
Works

Holland, 1 H. & E. Albert
Metallic Oxide—
Germany, 2 cks. Brit. Anti-Fouling
C. Co.

Mica—
E. Indies, 1,3564 W. M. Smith & Sons
" 1000 Dundee, Perth, &
London S. Co.

Molasses—
U. States, 200 cks. 1,100 c. Deering &
Robottom

" 50 285 W. G. Jacobs

Ochre—
Holland, 12 pks. Philipps & Graves
France, 61 brls. W. Harrison & Co.
U. States, 86 cks. J. Melvin

Phosphate of Lime—
France, 385 t. A. Hunter & Co.

Phosphate Rock—
Belgium, 130 t. Lawes Chemical
Manure Co.
" 1312 T. H. Lee
France, 202 t. W. E. Cole
" 230 A. Hunter & Co.
" 200 T. Farmer & Co.

Pitch—
N. Russia, 800 cks. Fellows, Morton,
& Co.

Plumbago—

Ceylon, 112 brls. Marshall & French
112 T. W. Beard
E. Indies, 40 A. B. Curtis & Co.
Germany, 5 cks. H. Johnson & Sons
Ceylon, 221 brls. J. Threddar, Son,
& Co.

Potash—

Canada, 145 c. S. Ward & Co.

Potassium Bicarbonate—

Holland, 9 cks. A. & M. Zimmermann

Potassium Carbonate—

France, 5 cks. H. Reid
N. Russia, 436 c. Gas Light & Coke Co.
Germany, 145 Petri Bros.
Canada, 74 Charles & Fox

Potassium Chloride—

Germany, 200 F. W. Berk & Co.

Potassium Oxymuriate—

Sweden, 101 kgs. G. Boor & Co.

Potassium Sulphate—

Germany, 508 bgs. Bessler, Waechter,
& Co.

Pyrites—

2,520 t. Tatham, Bromage,
& Co.

Quicksilver—

Spain, 13 brls. J. Walter & Co.

" 6,200 flsks. N. M. Rothschild
& Co.

" 13 brls. Prop. Middleton's
Wf.

Rosin—

U. States, 4,136 brls. F. & S. Chiesman

" 1,450 H. Hill & Sons

Belgium, 2 John Cockerill Line

" 500 Moore & Hole

Rosin Oil—

B.W.L., 1,000 brls. H. Hill & Sons

Saltpetre—

E. Indies, 238 bgs. Ross & Deering

" 1,298 Lucas & Spencer's Wf.

" 300 F. J. Wintle

" 1,321 L. & I. D. Jt. Co.

Soda—

Holland, 50 c. R. W. Greeff & Co.

" 55 J. Owen

Belgium, 500 W. Devouan & Co.

Soda Ash—

Holland, 2,160 c. R. Waters

Search—

France, 386 pks. Prprs. Dowgate Dk

Holland, 1,840 cs. Little & Johnston

" 121 Phillips & Graves

U. States, 400 bgs. R. G. Hall & Co.

Belgium, 260 cs. T. H. Lee

" 84 Leach & Co.

" 338 E. & T. Pink

Germany, 6 cks. T. H. Lee

Belgium, 60 cs. Butler's Wf. Ld.

" 65 Becker & Wagner

" 547 F. Claydon & Co.

Germany, 1,007 Phillips & Graves

Stearine—

Belgium, 251 bgs. H. Hill & Sons

" 54 pks. T. Ronaldson & Co.

" 38 bgs. 4 cks. W. H. Mitchell

Sulphur—

Spain, 20 t. S. E. Wf.

" 30 F. C. Devou & Co.

" 100 Johnson & Hooper

Italy, 210 W. C. Bacon & Co.

" 300 A. Hunter & Co.

Belgium, 20 J. Harrison

Talc—

E. Indies, 2,000 A. B. Curtis & Co.

" 40 Carter, Paterson, & Co.

Tartaric Acid—

Holland, 1,150 Kirkpatrick & Co.

" 70 F. C. Devou & Co.

Italy, 258 B. & F. Wf. Co.

Germany, 31 Domeier & Co.

Holland, 21 cks. B. & F. Wf. Co.

France, 25 "

Holland, 10 1,027 F. C. Devou & Co.

France, 24 A. E. Edwards

Ultramarine—

Holland, 10 cs. J. Barber & Co.

" 10 1 ck. Hernu, Peron,
& Co.

Germany, 6 H. Brooks & Co.

Holland, 3 J. Sauer

Varnish—

Germany, 1 pk. L. & I. D. Jt. Co.

U. States, 106 Taylor Bros.

" 25 Lunham & Moore

" 6 Dawson Bros.

White Lead—

France, 19 cks. J. L. Lyon & Co.
Belgium, 48 T. & W. Farmiloe, Ld.
" 85 J. L. Lyon & Co.
Germany, 70 Steinhoff, Sons, & Co.
Holland, 45 T. & W. Farmiloe, L.

Wood Pulp—

Germany, 220 bls. M. D. Co.

Sweden, 6,780 Henderson, Craig,
& Co.

Norway, 1,600 J. Throp

Holland, 50 W. G. Taylor & Co.

U. States, 294 Tough & Henderson

Sweden, 254 Ekman Pulp &
Paper Co.

Norway, 120 Christophersen & Co.

" 240 Henderson, Craig,
& Co.

Germany, 758 Tough & Henderson

Sweden, 247 M. D. Co.

Norway, 300 E. J. & W. Goldsmith

Holland, 250 "

Canada, 1,453 Becker & Co.

" 1,949 Henderson, Craig,
& Co.

U. States, 54 C. S. Lovell

Belgium, 681 Taylor Bros.

Sweden, 2,520 E. J. & W. Goldsmith

Portugal, 250 Page, Son, & East

Austria, 100 M. D. Co.

Sweden, 70 L. & N. W. Rly. Co.

Austria, 30 J. Coppo & Co.

Germany, 2,270 E. J. & W. Goldsmith

" 517 Andersen, Becker,
& Co.

Zinc Oxide—

Holland, 70 brls. M. Ashby, Ltd.

Germany, 10 cks. H. Keller & Co.

U. States, 400 brls. M. Ashby Ltd.

Holland, 120 Petri Bros.

" 53 cks. Burrell & Co.

Germany, 500 Soundy & Sons

LIVERPOOL.

Week ending June 17th.

Acetate of Lime—

New York, 240 bgs.

Acetic Acid—

Antwerp, 6 cs.

Rotterdam, 17 balloons

Antimony—

Hamburg, 1 ck.

Barytes—

Antwerp, 500 bgs.

Rotterdam, 20 cks

Bone Ash—

B. Ayres, 1,242 bgs.

Boric Acid—

Leghorn, 5 cks.

Borax—

Valparaiso, 2,077 sks.

Borate of Lime—

New York, 2,414 bgs. Pacific Borax &
Redwood's Cheml. Wks., Ld.

Borate of Lime (Sweepings)—

New York, 4 bgs.

Caoutchouc—

Valparaiso, 100 bls.

J. H. Schroeder & Co.

Castor Oil—

Calcutta, 117 cs.

Leghorn, 100 Ralli Bros.

Cod Oil—

St. John's, Nfld., 60 cks. J. J. Langley

Colours—

Ghent, 5 brls. J. T. Fletcher
& Co.

Cottonseed Oil—

Galveston, 100 brls.

Cream of Tartar—

Bordeaux, 35 cks.

Barcelona, 5 Sachse &
Klemm

Dyestuffs—**Annatto**

Bordeaux, 5 cks.

Argois

Oporto, 31 cks.

Patras, 19 bgs. 16 cs.

Cocaineal

Gd. Canary, 5 bgs.

" 25 Burrell & Co.

" 12 Canary Islands
Trading Co.

Cutch

Singapore, 209 bxs.

Divi Divi

Rio Hacha, 276 t. Brownbill
& Co.

Extracts

Hamburg, 83 cks.

Fustic

Tampico, 6,336 ps. Waterhouse
& Sons

" 2,385 Oetling & Co.

" 4,469 A. Meyer & Co.

Gambler

Singapore, 2,958 bls. 1,105 bgs.

Logwood

Halifax, 32 t. C. T. Bowring
& Co.

Saffron

Valencia, 5 cs.

Shumac

Palermo, 100 bgs. J. Glynn & Son

" 150 "

Turmeric

Calcutta, 9 bgs.

Valonia

Constantinople, 990 bgs. Jivan, Tekeian
& Co.

French Chalk—

Leghorn, 3 cs.

Glucose—

Hamburg, 1 ck.

New York, 100 brls. T. M. Duche
& Sons

" 150 "

Boston, 300 "

Norfolk, Va., 100 "

Glue—

Fiume, 200 bls.

Rotterdam, 3 cs.

Infusorial Earth—

Hamburg, 57 bgs.

Limestone—

Antwerp, 1 crt. J. T. Fletcher
& Co.

Lithopone—

Rotterdam, 20 cks.

Manganese—

Lisbon, 45 t.

Manganese Ore—

Poit., 3,175 t.

Kobe, 500 "

Manganese Oxide—

Hamburg, 1 cs.

Mineral White—

Fiume, 40 bgs.

Paraffin Scale—

Philadelphia, 223 brls.

New York, 800 Anglo-Am. Oil
Co.

Potash—

Rotterdam, 1 ck.

Pumice Stone—

Messina, 20 cks.

Pyrites—

Huelva, 2,722 t. Matheson
& Co.

Rosin—

Mobile (Ala.), 202 brls.

Salt—

New York, 250 bgs. Morris Beef
Co.

Saltpetre—

Hamburg, 15 cks. 10 kgs.

Calcutta, 349 bgs. Ralli Bros.

Soap—

New York, 700 bxs. Lorimer
& Co.

Bari, 152 cs.

Naples, 277 "

New York, 50 T. M'Millan
& Co.

Leghorn, 550 Weaver &
Sterry

N. Orleans, 1,015 brls.

Sodium Nitrate—

Iquique, 9,245 sks. Colorado
Nitrate Co.

" 2,826 "

Starch—

Bremen, 6 cs. 5 bgs.

Hamburg, 160 "

New York, 1,125 "

Antwerp, 300 "

Rotterdam, 23 "

Sulphur—

Catania, 150 bgs. 134 brls.

Palermo, 200 Bank of Montreal

Tallow—

San Francisco, 418 brls.

Philadelphia,

New York, 400 tcs. Colby & Co.

" 65 791 brls.

B. Ayres, 30 cks. J. M. Marc
& Co.

Boston, 150 419 brls. Colby
& Co.

" 350 "

Tartar—

Naples, 2 cks.

Tartaric Acid—

Bordeaux, 1 cs.

Hamburg, 1 ck.

Turpentine—

Savannah, Ga., 2,72

Starch—	
Antwerp,	289 cs.
Rotterdam,	249
Sulphur—	
Antwerp,	1 ck.
Sulphuric Acid—	
Rotterdam,	10 dms.
Tartar—	
Bordeaux,	3 cks. J. & P. Hutchison
Tartaric Acid—	
Rotterdam,	9 cks.
Waste Salt—	
Hamburg,	102 bgs. and qty.
Wood Pulp—	
Port Medway,	27,520 bls.
Hamburg,	1,347
Halifax,	14,043
" N.S.,	1,800
Zinc Ashes—	
Antwerp,	9 cks.
Zinc Oxide—	
Rotterdam,	65 brls.

HULL.

Week ending June 19th.

Acetic Acid—	
Rotterdam,	43 balloons Hutchinson & Son
"	25 W. & C. L. Ringrose
Amsterdam,	12 Hutchinson & Son
Alum—	
Riga,	43 cks. Wilson, Sons, & Co., Ltd.
Barytes—	
Hamburg,	23 cks. Bailey & Leatham, Ltd.
Antwerp,	184 Blundell, Spence, & Co.
Amsterdam,	106 W. & C. L. Ringrose
Bremen,	86 cks. Hutchinson & Son
Amsterdam,	20 Hutchinson & Son
Rotterdam,	30 bgs. "
Chemicals (otherwise undescribed)	
Rotterdam,	2 cs. W. & C. L. Ringrose
Hamburg,	23 cks. Wilson, Sons, & Co., Ltd.
Dunkirk,	68 pks. "
Cod Oil—	
Aalesund,	25 brls. Wilson, Sons, & Co., Ltd.
Colours—	
Rotterdam,	27 cks. W. & C. L. Ringrose
"	6 brls. 137 pks.
Danzig,	6 cks.
Antwerp,	20 Wilson, Sons, & Co., Ltd.
Cottonseed Oil—	
New York,	240 brls. Wilson, Sons, & Co., Ltd.
Cryolite—	
Copenhagen,	5 cks. Wilson, Sons, & Co., Ltd.
Dyestuffs—	
Alizarine	
Rotterdam,	7 brls. W. & C. L. Ringrose
Madder	
Rotterdam,	2 cks. W. & C. L. Ringrose
Valonia	
Smyrna,	205 t.
Farina—	
Hamburg,	25 bgs. Wilson, Sons, & Co., Ltd.
Stettin,	100 "
Harlingen,	150 bls. Hutchinson & Son
Glucose—	
New York,	106 brls. Wilson, Sons, & Co., Ltd.
Stettin,	10 cks. "
Glue—	
Hamburg,	114 bgs. Wilson, Sons, & Co., Ltd.
Bremen,	10 Veltmann & Co.
Stettin,	9 cks. Wilson, Sons, & Co., Ltd.
Rouen,	43 Rawson & Robinson
Antwerp,	4 Wilson, Sons, & Co., Ltd.
Dunkirk,	35 "
Lead Acetate—	
Hamburg,	31 cks.
Limestone—	
Antwerp,	1 crite. Wilson, Sons, & Co., Ltd.

Lithopone—	
Rotterdam,	4 cks. Hutchinson & Son
Minium—	
Rotterdam,	11 cks. Hutchinson & Son
Ochre—	
Rouen,	8 cks. Rawson & Robinson
Paint—	
New York,	15 cs. Wilson, Sons, & Co., Ltd.
Christiania,	3 brls. "
Phosphate—	
Ghent,	260 t. Wilson, Sons, & Co., Ltd.
Dunkirk,	500 bgs. "
Pitch—	
Rotterdam,	2 cks. Hutchinson & Son
Potash—	
Antwerp,	36 pks. Wilson, Sons, & Co., Ltd.
Potassium Sulphate—	
Rotterdam,	10 bgs. T. W. Flint & Co.
Saltpetre—	
Antwerp,	135 bgs. Wilson, Sons, & Co., Ltd.
Soap—	
Antwerp,	2 cs. Bailey & Leatham, Ltd.
Soda—	
Antwerp,	200 bgs.
Sodium Nitrate—	
Hamburg,	50 kgs. Wilson, Sons, & Co., Ltd.
Starch—	
Rotterdam,	191 cs. Hutchinson & Son
Antwerp,	75 Bailey & Leatham, Ltd.
"	60 O. S. Stephenson & Co.
Ghent,	276 Wilson, Sons, & Co., Ltd.
Dunkirk,	30 bgs. Veltmann & Co.
Bremen,	2,303 cs. 1,369 pks.
Stearine—	
New York,	16 hds. Wilson, Sons, & Co., Ltd.
Antwerp,	150 bgs. Bailey & Leatham, Ltd.
"	82 Wilson, Sons, & Co., Ltd.
Tallow—	
New York,	60 tcs. Wilson, Sons, & Co., Ltd.
Dunkirk,	67 cks. "
Tartaric Acid—	
Rotterdam,	2 cks. W. & C. L. Ringrose
"	2 Hutchinson & Son
Treacle—	
New York,	98 brls. Wilson, Sons, & Co., Ltd.
Ultramarine—	
Rotterdam,	4 cks. Hutchinson & Son
Varnish—	
Hamburg,	2 dms. Wilson, Sons, & Co., Ltd.
White Lead—	
Amsterdam,	95 cks. Hutchinson & Son
Rotterdam,	9 "
Dunkirk,	9 W. & C. L. Ringrose
"	13 brls.
Wood Pulp—	
Hamburg,	160 bls. Bailey & Leatham, Ltd.
Rotterdam,	37 Hutchinson & Son
"	80 pks. W. & C. L. Ringrose
Zinc Ashes—	
Amsterdam,	9 cks. Hutchinson & Son
Zinc Chlorate—	
Rotterdam,	4 cks. Hutchinson & Son
Zinc Oxide—	
Rotterdam,	5 cks. W. & C. L. Ringrose
Zinc Sulphate—	
Gothenburg,	10 bgs. Wilson, Sons, & Co., Ltd.
Zinc White—	
Rotterdam,	25 cks. Hutchinson & Son

GLASGOW.

Week ending June 24th.

Asbestos—	
Montreal,	520 bgs.
Barium Sulphate—	
Antwerp,	79 cks. 500 bgs.
Barytes—	
Rotterdam,	120 cks. J. Rankine & Son
Chemicals (otherwise undescribed)	
Rotterdam,	1 cs. J. Rankine & Son
Chromium Fluoride—	
Rotterdam,	1 cs. J. Rankine & Son
Colours—	
Hamburg,	4 cks.
Rotterdam,	117 pks. J. Rankine & Son
Cream of Tartar—	
Bordeaux,	41 cks.
Dyestuffs—	
Alizarine	
Rotterdam,	12 cks. J. Rankine & Son
Aniline	
Rotterdam,	7 cks. 4 cs. J. Rankine & Son
Argols	
Bordeaux,	20 bgs.
Farina—	
Delfsryhl,	600 bgs. J. Rankine & Son
Gelatine—	
Hamburg,	5 cs.
Glucose—	
Baltimore,	500 brls. Waddell & Bryson
"	600
New York,	221
Glue—	
Hamburg,	60 bgs.
Methyl Alcohol—	
Antwerp,	13 dms.
Paint—	
New York,	1 brl.
Phosphate Rock—	
Charlotte Harbour,	2,377 t. A. Cross & Sons
Potash—	
Rotterdam,	4 cks. J. Rankine & Son
Montreal,	22 brls.
Potassium Prussiate—	
Antwerp,	8 cks.
Rosin—	
New York,	72 brls.
Saltpetre—	
Hamburg,	5 cks.
Soap—	
New York,	39 cs.
Starch—	
Baltimore,	250 sks.
New York,	200 950 bxs.
Antwerp,	240 cs. 10 bgs.
Stearine—	
Rotterdam,	30 cks. J. Rankine & Son
Talc—	
New York,	110 bgs.
Tallow—	
Boston,	50 brls.
Treacle—	
New York,	300 brls.
Ultramarine—	
Rotterdam,	14 cs. J. Rankine & Son
Hamburg,	50
Ghent,	2
Waste Salt—	
Hamburg,	246 cks.
White Lead—	
Antwerp,	3 cks.
Whiting—	
Dieppe,	66 cks.
Wood Pulp—	
Bergen,	910 bls.
Christiania,	1,761 5 cs.
Zinc White—	
Rotterdam,	35 pks. J. Rankine & Son

TYNE.

Week ending June 19th.

Alum Earth—	
Hamburg,	27 cks. Tyne S. S. Co.
Antimony Ore—	
Antwerp,	2,990 bgs. Tyne S. S. Co.
Barium Chlorate—	
Rotterdam,	350 bgs. Tyne S. S. Co.
Barytes—	
Antwerp,	400 bgs. Tyne S. S. Co.
Cod Oil—	
Drontheim,	1 brl.
Colours—	
Rotterdam,	2 cks. Tyne S. S. Co.
Hamburg,	2 3 cs. "
Antwerp,	4 "
Limestone—	
Antwerp,	2 crts. Tyne S. S. Co.
Manganese Ore—	
Rotterdam,	200 t. Tyne S. S. Co.
Pyrites—	
Huelva,	1,655 t. Tharsis Sulphur & Copper Co.
Rosin—	
Brunswick,	3,162 brls. Mawson & Clark
Starch—	
Rotterdam,	90 cs. Tyne S. S. Co.
Tartaric Acid—	
Rotterdam,	8 cks. Tyne S. S. Co.
Wood Pulp—	
Christiania,	820 bls.
Rotterdam,	100 Tyne S. S. Co.
Gothenburg,	20 pks.
Zinc Oxide—	
Antwerp,	30 brls. Tyne S. S. Co.
Zinc White—	
Rotterdam,	38 cks. Tyne S. S. Co.

GOOLE.

Week ending June 16th.

Alizarine—	
Rotterdam,	32 brls.
Alkali—	
Calais,	2 cks.
Anthracene—	
Boulogne,	5 cks.
Antimony—	
Boulogne,	5 cks.
Dyestuffs (otherwise undescribed)	
Boulogne,	13 cks. 5 cs. 107 pks.
Rotterdam,	37 10
Infusorial Earth—	
Hamburg,	518 bgs.
Potash—	
Hamburg,	20 dms.
Calais,	31
Potassium Carbonate—	
Hamburg,	10 cks.
Rosin—	
Savannah,	3,800 brls.
Saltpetre—	
Rotterdam,	100 bgs.
Tar Salts—	
Hamburg,	4 cks.
Waste Salt—	
Hamburg,	170 t.

GRIMSBY.

Week ending June 19th.

Albumen—	
Hamburg,	10 cks.
Aniline—	
Hamburg,	69 pks.
Antwerp,	8
Aniline Dyes—	
Hamburg,	8 pks.
Chemicals (otherwise undescribed)	
Hamburg,	14 cks. 9 cs.
Rotterdam,	41 20 cbys.
Antwerp,	6 5 cs.
Dyes—	
Hamburg,	21 cks.
Pitch—	
Hamburg,	79 cks.
Talc—	
Dieppe,	1 sk.
Wolfram Ore—	
Hamburg,	5 cs.

EXPORTS OF CHEMICAL PRODUCTS

OF

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending June 23rd.

Acids—		
Hamburg,	30 cks.	£23
Durban,	25	48
E. London,	50	96
Alkali—		
Lyttelton,	3 t. 14 c.	£23
Ammonia—		
Rio de Janeiro,	8 t. 4 c.	£40
Ammonia (Liquid)—		
Cologne,	46 dms.	£169
Ammonium Carbonate—		
Rotterdam,	30 kgs.	£45
Melbourne,	7 c.	11
Cologne,	7 cks.	29
Rouen,	5 t. 10	140
Ammonium Chloride—		
Rio de Janeiro,	2 t.	£35
Ammonium Nitrate—		
Pt. Elizabeth,	13 cks.	£109
Ammonium Sulphate—		
Bremen,	50 t.	£400
N. Orleans,	100	750
Ostend,	204 16	1,700
Mauritius,	100	850
Durban,	20	144
Hamburg,	110	850
Anhydrous Ammonia—		
Cape Town,	6 cyldrs.	£57
Arsenic—		
Hiogo,	20 kgs.	£24
Bleaching Powder—		
Durban,	1 t.	£11
Borax—		
Wellington,	10 c.	£11
Cape Town,	2 t. 7	57
Rotterdam,	10 cks.	27
Carbolic Acid—		
Antwerp,	4 cks.	£25
Cologne,	37	180
Carbonic Acid Gas—		
Jersey,	50 tubes	£19
Jamaica,	1 cs.	12
Caustic Soda—		
Wanganui,	8 c.	£19
Wellington,	4	11
Philadelphia,	86 t.	766
Cape Town,	8	37
Brisbane,	5	37
Pt. Elizabeth,	1 13	37
Fremantle,	3	37
Delagoa Bay,	1	32
Chemicals (otherwise undescribed)		
Launceston,	16 pks.	£20
Dusseldorf,	12 cks. 160	26
Perth,	31	99
Hamburg,	1 cs. 14 c.	46
Adelaide,	48	29
Brussels,	2	40
Melbourne,	15 dms.	283
Calcutta,	250 12 kgs.	48
Madras,	10	24
Cape Town,	22	80
Cologne,	18	4
New York,	5	76
Rotterdam,	14 10	100
Malaga,	6	19
Durban,	1 t.	19
Citric Acid—		
Melbourne,	10 c. 20 kgs.	£165
Hamburg,	4 cks.	355
Brussels,	10	60
Rotterdam,	5	32
Odessa,	5	33
Sydney,	10	58
Durban,	1	7
Brisbane,	1 tank	7
Genoa,	1 t.	179
Coal Products—		
Alizarine		
Lyttelton,	6 pks.	£96
New York,	25 cks.	284

Aniline		
Madras,	1 cs.	£7
Melbourne,	2	55
Aniline Oil		
Genoa,	5 dms.	£175
New York,	12	350
Aniline Salts		
Genoa,	20 cks.	£140
Leghorn,	5	40
New York,	23	150
Anthracene		
Ruhrort,	377 cks.	£2,150
Cologne,	125	1,450
Benzine		
Yokohama,	4 dms.	£2
Benzol		
Boulogne,	48 cks.	£172
Hamburg,	103 pks. 72 mlt.	703
Rotterdam,	14 puns.	180
Cologne,	28 dms.	356
Grososote		
Bordeaux,	64,867 gins.	£753
New York,	800 cks.	428
Naphthaline		
Hamburg,	6 cks. 102 bgs.	£130
Antwerp,	1 btl.	11
Pitch		
Antwerp,	819 t.	£1,105
Philadelphia,	100 cks.	28
Cologne,	2	10
New York,	1,472 bgs.	195
Hochfeld,	340	522
Prussian Blue		
Rotterdam,	4 cks.	£12
Pyridine		
Cologne,	13 cks.	£145
Antwerp,	17	263
Tar		
Brisbane,	50 dms.	£10
Halifax,	17 pks.	17
Fremantle,	50	9
Copper Sulphate—		
Treport,	14 t. 15 c.	£220
Malta,	4	68
Rotterdam,	2	36
Paris,	5	76
Cologne,	5 2	79
Cream of Tartar—		
Wellington,	10 c.	£41
Adelaide,	10	39
Brisbane,	1 t. 5	102
Yokohama,	1 1	10 brls. 175
Lyttelton,	5	20
Melbourne,	1 5	96
Disinfectants—		
Calcutta,	57 pks. 40 dms.	£82
Sydney,	133	34 cs. 261
Colombo,	50	25
Wellington,	10	27
Lime—		
Demerara,	102 puns.	£74
Manure—		
Antwerp,	22 t.	£76
Timaru,	50	275
Durban,	40	220
Lisbon,	218 9 c.	1,595
Trinidad,	170 2	358
Ghent,	42 7	26
Barbadoes,	54	246
Oxygen—		
Amsterdam,	1 cs.	£45
Phosphate—		
Demerara,	68 t.	£136
Potash—		
Lyttelton,	16 c.	£34
Sydney,	2 t. 7	40
Cape Town,	1 2	17
Potash Salts—		
Auckland,	10 t.	£840
Potassium Bicarbonate—		
Sydney,	11 c.	£12
Potassium Chlorate—		
Montreal,	1 t.	£40
Potassium Cyanide—		
New York,	100 cs.	£455
Boulogne,	20 cks.	50
Potassium Iodide—		
Cape Town,	1 cs.	£35

Potassium Prussiate—		
Philadelphia,	58 cks.	£923
Yokohama,	2 c.	13
Antwerp,	3 5 t. 4	299
New York,	85	1,313
Salt Cake—		
Antwerp,	135 t.	£236
Saltpetre—		
Newcastle,	10 c.	£10
Pt. Elizabeth,	9	10
Santos,	18	18
Rio de Janeiro,	5 t. 17	120
Sheep Dip—		
Sydney,	50 cs. 10 t. 14 c.	£450
E. London,	3 7	38
Durban,	1,000 dms.	210
Calcutta,	125	7
Soda—		
Rotterdam,	5 t.	£30
Soda Crystals—		
Newcastle,	38 t. 3 c.	£101
Sodium B'carbonate—		
Brisbane,	10 c.	£8
Sydney,	1 t. 4	24
New York,	18	7
Sodium Bichromate—		
Genoa,	1 t. 3 c.	£36
Sodium Bisulphite—		
Vera Cruz,	10 t. 17 c.	£51
Sulphur—		
Pt. Elizabeth,	20 kgs. 10 cks.	£18
Sulphuric Acid—		
Colombo,	10 dms.	£14
Superphosphates—		
Timaru,	122 t. 5 c.	£291
Tartaric Acid—		
Adelaide,	10 c.	£60
Melbourne,	15	86
Pt. Elizabeth,	2	14
Pt. Said,	5 pks.	31

LIVERPOOL.

Period ending June 23rd.

Alum—		
Lisbon,	10 t. 4 c. 3 q.	£51
Catania,	1 10	5
Melbourne,	5 3	24
Cape Town,	1 6 3	9
Antwerp,	4 10	23
Demerara,	2 4	17
Galatz,	1	5
Montreal,	1	5
Ammonium Carbonate—		
Genoa,	13 pks.	£24
Santos,	14 c. 1 q.	24
Halifax,	5	6
Hamburg,	1 t.	23
Ammonium Chloride—		
Sydney,	8 c.	£12
New York,	30 t.	600
Ghent,	1 3	20
Hiogo,	1 5	23
Ammonium Sulphate—		
Valencia,	195 t. 6 c. 3 q.	£1,380
Las Palmas,	25	197
Bleaching Powder—		
Baltimore,	83 cks.	
Belize,	4 cs.	
Bombay,	15 200 bxs	
Boston,	1,057	
Dunkirk,	18	
Genoa,	143	
Leghorn,	17	
Lisbon,	30	
Maranham,	10	
Naples,	59	
Nantes,	15	
Newport News,	612	
New York,	458	
Rio de Janeiro,	30	
Seville,	10	
Venice,	30	
Vera Cruz,	24 brls.	
Boric Acid—		
Antwerp,	1 t. 8 c.	£35

Borax—		
Bremen,	6 c.	£5
Iquique,	18 2 q.	18
Rotterdam,	5 t.	100
Tampico,	5	5
Calcium Chloride—		
Odessa,	10 t. 4 c.	£20
Port Said,	4	9
Carbolic Acid—		
Hamburg,	5 c.	£29
Accra,	1 ca.	6
Genoa,	10	47
New York,	5 t. 13 3 q.	370
Caustic Soda—		
Adelaide,	90 dms.	
Aleppo,	5	
Alexandria,	30	
Alicante,	15	
Ambrizette,	85	
Antwerp,	13	
Barcelona,	100 65 cks.	
Bari,	47	
Bilbao,	330	
Bombay,	40	
Boston,	140	
B. Ayres,	90	
Calcutta,	20	
Catania,	15	
Ceara,	9	
Corinto,	6	
Corunna,	30 brls.	
Dunkirk,	35	
Fiume,	30	
Galatz,	69 150 kgs.	
Genoa,	579	
Gothenburg,	166	
Hamburg,	443	
Havana,	12	
Hiogo,	490	
Honolulu,	70	
Ibrail,	70	
Jaffa,	130	
Leghorn,	130	
Lisbon,	30	
Manila,	1	
Marseilles,	105	
Mauritius,	10	
Melbourne,	91	
Messina,	55	
M. Video,	30	
Montreal,	100	
Naples,	122	
N. O.leans,	180	
New York,	895	
Odessa,	155	
Oporto,	30	
Passages,	65	
Penang,	70	
Penedo,	20	
Philadelphia,	862	
Riga,	11	
Rouen,	55	
St. John's,	50	
Seville,	471	
Sydney,	38	
Rio de Janeiro,	10	
Chemicals (otherwise undes.)—		
Montreal,	8 t. 16 c. 1 q.	£45
Bombay,	3	108
Boston,	41 2 1	230
Calcutta,	51 11	144
Salonica,	1 7	49
New York,	15 15 2	491
Christiania,	5	7
China Clay—		
Baltimore,	200 cks.	
Barcelona,	99	
Bombay,	50 90 bgs.	
Boston,	1,504	
Maranham,	20	
Odessa,	100	
Philadelphia,	200	
Coal Products—		
Aniline Oil		
Malaga,	1 dm.	
Aniline Salts		
Genoa,	20 cks.	
Malaga,	1	
Montreal,	12 cs.	
Anthracene		
Rotterdam,	95 cks.	

Benzoline		
Ceara,	1 dm.	
Cresote Oil		
Lisbon,	75 brls. 85 cks.	
N. Orleans,	500	
Pitch		
Antwerp,	10 brls.	
Rouen,	2 cks	
New York,	116	

Tar		
Akassa,	1 ck.	
Cabenda,	10 brls.	
Conakry,	20	
New York,	13	

Copper Sulphate—		
Oporto,	3 t. 2 c.	£50
Brindisi,	3 10	57
Palermo,	1 4	20
Copenhagen,	0	7
Galatz,	7 6 2 q.	137
Fiume,	20 4	327
Odessa,	12	9
B. Ayres,	9 19 1	168
Vigo,	10 17	318
Tarragona,	10 1	82
Christiania,	5 1	45
Amsterdam,	2 18	78
Calcutta,	5	49
Callao,	3	9
Hamburg,	14 1	158
Lisbon,	9 19 1	27
Piræus,	1 15 1	171
Barcelona,	10	15
Messina,	2 19 2	32
Canterbury,	2	39
Porto Alegre,	2 10	249
Venice,	15 1	492
Bordeaux,	30 3 2	

Copperas—		
San Sebastian,	2 t. 10 c.	£5

Disinfectants—		
Rangoon,	10 c.	£3

Iron Oxide—		
Philadelphia,	16 t.	£73

Lime—		
Lagos,	13 t. 5 c.	£13

Magnesia—		
Marseilles,	40 cs.	
Odessa,	6	
Havre,	20	

Potassium Chloride—		
Nantes,	5 t. 7 c. 2 q.	£13

Magnesium Sulphate—		
Barl,	10 bgs.	

Mercuric Oxide—		
Vera Cruz,	2 c.	£28

Oxalic Acid—		
Boston,	7 t. 9 c.	225

Paint—		
Alexandria,	51 pks.	
Almeria,	3 cks.	
Antwerp,	2 2 dms.	
Belize,	407 kgs.	
Beyrout,	30 35	
Bilbao,	30	
Bordeaux, 5 bxs.	100	
Caoiz,	250	
Cape Coast Castle,	24	
Cape Town,	26	
Ceara,	1	
Colombo,	12	
Coquimbo, 56 cs.	9	
Corunna,	10	
Delagoa Bay,	4	
Galata,	100	
Gibraltar,	6	
Gd. Bassam,	40	
Guayaquil,	8	
Havre,	2 41	
Ibrail,	20	
Iquique,	23 cs.	
Lisbon,	36	
Lucea,	2	
Malta,	12	
Manaos,	7 13	
Manila,	1 503 50	
Messina,	8 12	
Nassau,	5	
New York,	95 303 pks.	
Pana,	54 61	
Philadelphia,	40 50	
Pisagua,	167	
Port Natal,	26	
Progresso 11 brls.		
Rio de Janeiro,	30	
Rotterdam,	1 100	
St. Domingo,	13	
St. John's,	70	
Savanna,	260	
Sierra Leone,	90	
Valparaiso,	576	
Venice,	2 cs.	

Painters' Colours—		
Alexandria,	40 kgs.	
Antwerp,	24 cks.	
Bahia,	1	
Barcelona, 1 cs.		
Beyrout,	5	
Bombay,	55 840	
Biemen,	81	
B. Ayres,	32 75 60 118 brls.	
Calcutta,	6	
Ceara,	5	
Church,	2 bxs.	
Constantinople,	80	
Coquimbo, 195 cs.	45 2 dm.	
Ghent,	95	
Genoa,	10 80 hgs.	
Gothenburg,	10 100	
Havana,	3	
Leghorn,	30	
Manaos,	1 22	
Malta,	250 1 brl.	
Melbourne,	40	
M. Video,	8 1 5	
Newcastle,	1 cs. 40	

Paraffin Wax—		
Boston,	100 cs.	
Genoa,	20 bgs. 3	
Larnaca,	5	
Palermo,	5	
Para,	10	

Phosphorus—		
Tampico,	5 c.	£55
Hioho,	4	65

Picric Acid—		
New York,	2 t. 3 c.	£215

Potassium Carbonate—		
New York,	17 t. 17 c.	£320

Potassium Chlorate—		
Melbourne,	2 t.	£65
Hamburg,	1	33
New York,	151 3 c.	4,760
Philadelphia,	3 5	98
Havana,	5	9
Gothenburg,	1	30
Genoa,	10	16
Hioho,	5	175

Salt—		
Akassa,	337 t. 11 c.	
Ambrizette,	31 15	
Amsterdam,	110	
Antwerp,	580 100 cs.	
Baltimore,	120	
Bathurst,	29	1,000 sks
Batanga,	12 2	
Bombay,	2 5	
Boston,	500	
Brass,	20	
Cameroons,	153 10	
Cape Lopez,	25 13	
Christiania,	11	
Clarence,	4 10	
Conakry,	56	
Demerara,	46	
Dix Cove,	54	
Dunedin,	30	
Egwanga,	50	
Ghent,	50	
Gd. Bassam,	25	
Kinsembo,	7	
Landana,	75	
Lagos,	2,489 bgs.	
Loango,	6 t.	
Malta,	5	
Matadi,	10	
Memel,	488	
M. Video,	9	
Montreal,	1,147	
Muculla,	12 10	
Mussera,	32	
Newcastle,	250	
N. Orleans,	20	
New York,	256 1	
Noqui,	70	
Old Calabar,	30	
Pana,	312	
Pt. Natal,	20	
Reykjavik,	100	
Rotterdam,	10	
Savanna,	55 5	
Sierra Leone,	200	
Tumba,	75	
Vadso,	600	

Salt Cake—		
Antwerp,	60 t.	£68
Callao,	10 2 c	28

Sheep Dip—		
B. Ayres,	36 t. 10 c. 3 q.	£67 1
Melbourne,	7 14 1	71
Punta Arenas,	14 2	24
Rangoon,	6 3	8

Soap—		
Alexandria,	15 bxs.	25 cs.
Algoa Bay,	500 20 cks.	195

Amsterdam,	221	
Axim,	100	
Baltimore,	95	
Barbadoes,	730	
Beira,	50	
Bonavista,	6	
Bombay,	610 35	
Brass,	50	
B. Ayres,	3	
Cabenda,	20	
Calcutta,	300 bdis. 92	
Callao,	2	
Cameroons,	100	
C. C. Castle,	200	
Cape Town,	614	
Cartagena, N.G.,	12	
Constantinople,	22	
Copenhagen,	3	
Cronstadt,	200	
Curacao,	300	
Delagoa Bay,	35	
Demerara,	1,610	
Durban,	50	
Fogo,	8	
Genoa,	200	
Ghent,	10	
Gibraltar,	100	
Gd. Bassa,	85	
Grenada,	175	
Guayaquil,	25	
Halifax,	300	
Hamburg,	500	
Hong Kong,	1,000	
Iquitos,	300	
King's Cove,	8	
Lagos,	44	
Madras,	58	
Manaos,	200	
Malta,	30	
New York,	121	
Old Calabar,	520	
Opeho,	500	
Pt. Elizabeth,	675	
Pt. Natal,	750	
Rangoon,	500	
Rotterdam,	1,350	
St. John's,	qty. 21	
Salonica,	30	
Sapeli,	601	
Shanghai,	4,180	
Singapore,	200	
Trinidad,	2,100	

Soda Alkali—		
Barcelona,	50 brls.	
Lisbon,	85 64 cks.	

Soda Ash—		
Adelaide,	165 cks	
Antwerp,	1,200 bgs.	
Baltimore,	800	
Barcelona,	362	
Boston,	20	
B. Ayres,	200 brls. 150	
Cadiz,	28	
Calcutta,	38	
Copenhagen,	190	
Corfu,	30	
Demerara,	8	
Drammea,	50	
Fiume,	100	
Ghent,	50 kgs.	
Genoa,	150 bgs.	
Hamburg,	650	
Hioho,	320	
Leghorn,	100	
Maranham,	50	
Messina,	3 cs.	
New York,	910 1,184 cks.	
Oporto,	10	
Pernambuco,	30	
Philadelphia,	200 25 tcs. 189	
Rio de Janeiro,	20 brls.	
Rotterdam,	3,000	
St. Stephen,	14 tcs.	
San Francisco,	234	
San Sebastian,	33	
Savanna,	60 kgs.	
Valparaiso,	50	
Varna,	50 brls.	

Soda Crystals—		
Alexandria,	50 brls.	
Boston,	560	
B. Ayres,	134 cks.	
Gibraltar,	30	
Honolulu,	10	
Iquique,	50 kgs. 100	
Jaffa,	15	
Malta,	1	
M. Video,	50	
Montreal,	62	
New York,	277	
Philadelphia,	680	
St. John's,	280	
Sydney,	40 50	
Valparaiso,	67	

Soda Oxide—		
Marseilles,	5 cs.	

Sodium Bicarbonate—		
Adelaide,	15 kgs.	
Alexandria,	25 20 brls.	
Algoa Bay,	200 bgs.	
Ambrizette,	50 kgs.	
Ancona,	60	
Constantinople,	4 cks.	
Delagoa Bay,	130	
Halifax,	150	
Hamburg,	10	
Havre,	65	
Hioho,	1,750	
Jaffa,	9	
Antwerp,	20	
Bombay,	40	
Cape Town,	20	
Genoa,	75	
Melbourne,	200	
M. Video,	45	
Montreal,	300 20	
Nagasaki,	950	
Nantes,	37	
Newcastle,	100	
New York,	20	
Pt. Natal,	80	
Quebec,	200	
Rangoon,	65	
Rouen,	40	
Seville,	147	
Smyrna,	150	
Sydney,	247	
Valparaiso,	280	
Vera Cruz,	10 40 bgs. qty. 9	

Sodium Carbonate—		
Boston,	56 brls.	
Ceara,	1 kg.	

Sodium Chlorate—		
Boston,	175 kgs.	
Danzig,	6 brls.	
Hamburg,	2	
New York,	400	

Sodium Prussiate—		
Boston,	24 cks.	

Sodium Silicate—		
Bombay,	10 brls.	
Havre,	20	

Starch—		
Maranham,	8 cks.	

Sulphur—		
Colombo,	1 t. 1 c.	£6
Boston,	250 7	1,064

Sulphuric Acid—		
Macao,	1 t. 1 c.	£11
Kingston, Jam.,	8	

Superphosphates—		
Barcelona,	15 t. 1 c.	£24
Nantes,	149 8	360

Varnish—		
Alexandria,	4 brls.	
Antwerp,	24 cks.	
Bilbao,	1	
Boma,	20	
Coquimbo,	20 dms. 1 cs.	
M. Video,	2	
Venice,	2	

White Lead—		
B. Ayres,	20 cks.	

Zinc Chloride—		
Bombay,	1 t. 2 c.	£15

MANCHESTER.		
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<i>Period ending June 23rd.</i>		
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Alkali—		
Hamburg,	120 cks.	

Alum—		
Jaffa,	3 brls.	
Tripoli, B.,	60	

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Disinfectants—

Bombay, 40 cks. 6 cs. 5 dms.

Glue—

Barcelona, 8 cks.

Indigo—

Gothenburg, 2 cts.

Linseed Oil—

Alexandria, 40 brls.

Beyrou, 6

Sfax, 2

Tunis, 11

Paint—

Alexandria, 60 kgs.

Jaffa, 5 cks.

Paraffin Wax—

Barcelona, 80 bgs.

Rosin—

Bombay, 100 brls.

Salt—

Helsingfors, 60 cks. 1 cs. 1 sk.

Soap—

Malta, 50 bxs.

Bombay, 2 cs.

Rotterdam, 25

Soda Ash—

Helsingfors, 255 cks.

Soda Bottoms—

Rotterdam, 35 dms.

Sodium Bicarbonate—

Alexandria, 8 cks.

Sulphur—

Sannesund, 352 t. 12 c.

Tallow—

Alexandria, 13 brls.

Yarnish—

Alexandria, 1 cs.

Bombay, 5 dms.

HULL.

Week ending June 19th.

Antimony—

Wasa, 1 kg.

Benzol—

Amsterdam, 21 dms.

Bleaching Powder—

Stettin, 17 cks.

Carbolic Acid—

Amsterdam, 73 cks.

Caustic Soda—

Helsingfors, 8 cks.

Stettin, 6 dms.

Chemicals (otherwise undescribed)

Abo, 11 cks.

Amsterdam, 34

Antwerp, 21 cs.

Bordeaux, 10

Copenhagen, 10

Christiania, 12 370 lbs.

Gothenburg, 29 10 pks.

Hamburg, 16 30 10

Helsingfors, 2 10

New York, 2

Odessa, 40

Rotterdam, 4 6 10 kgs.

Stockholm, 4 4 20 pks.

Uleaborg, 1

Wyburg, 41

Cottonseed Oil—

Amsterdam, 655 c.

Antwerp, 289

Bergen, 52

Bordeaux, 33

Christiania, 38

Christiansand, 7

Hamburg, 890

Helsingfors, 103

Rotterdam, 461

Stettin, 200

Creosote—

Antwerp, 85 brls.

Dyestuffs (otherwise undescribed)

Christiania, 2 cks. 12 sks.

Stockholm, 15

St. Petersburg, 1 13 cs.

Wasa, 1 kg.

Linseed Oil—

Amsterdam, 104 c.

Bergen, 518

Bordeaux, 140

Copenhagen, 108

Christiania, 1,243

Christiansand, 121

Drontheim, 75

Hamburg, 390

Stockholm, 61

Stavanger, 278

Ochre—

Hamburg, 3 cks.

Paint—

Bergen, 1 ck.

Rotterdam, 1 kg.

Painters' Colours—

Antwerp, 22 cks. 1 cs. 1 pk.

Bergen, 1 10 dms.

Copenhagen, 12

Dunkirk, 6

Gothenburg, 3

Hamburg, 24 80 pks.

Helsingfors, 4 1 brl. 1 dm.

Helsingfors, 137 1 cs. 5 pks.

New York, 135

Norwegian, 5

Odessa, 162

Riga, 5

Rouen, 27

Rotterdam, 24

Stettin, 2

Stockholm, 50 1

St. Petersburg, 37 4 1 dm.

Stavanger, 1

Uleaborg, 93 1 pk.

Wasa, 5

Wyburg, 100

Pitch—

Amsterdam, 5 t.

Antwerp, 173

Helsingfors, 290 cks.

Wyburg, 2

Pumice Stone—

Uleaborg, 1 ck.

Soap—

Christiania, 12 cs.

Stockholm, 1

Sulphur—

Wasa, 2 cks.

Tallow—

Amsterdam, 48 cks.

Gothenburg, 4

Stockholm, 22

Wasa, 217

Tar—

Amsterdam, 6 brls.

Antwerp, 2

Copenhagen, 20 cks.

Gothenburg, 10

Hamburg, 3 20

Rotterdam, 10 10

Stettin, 5

Uleaborg, 50

Wasa, 140

Yarnish—

Abo, 2 cs.

Amsterdam, 5

Antwerp, 8

Copenhagen, 1 ck. 5

Christiania, 1 2

Gothenburg, 6 1

Hamburg, 6

Helsingfors, 2 1

Norwegian, 2

Stettin, 19

GLASGOW.

Week ending June 24th.

Ammonium Carbonate—

Stockholm, 6 kgs.

Ammonium Sulphate—

Amsterdam, 53 t. 3 c.

Spain, 290 15 1/2

France, 401 6 1/2

Bleaching Powder—

Valparaiso, 1 t. 5 1/2 c.

Natal, 2 9

Melbourne, 15 1/4

Caustic Soda—

Canada, 33 t. 3 c.

U.S.A., 148 16

Coal Products—

Creosote

Rotterdam, 48 cks.

Creosote Oil

Christiania, 50 brls.

France, 10 t. 12 c.

Danzig, 10 t. 12 c.

Canada, 10 t. 12 c.

U.S.A., 10 t. 12 c.

Tar

Trondhjem, 10 brls.

Boston, 1,080 brls.

Danzig, 1,080 brls.

Dyestuffs (otherwise undescribed)

Canada, £40

Extracts—

Boston, £30. 13s.

Canada, £440

Rotterdam, 2 cks.

Victoria, 173

Farina—

Rotterdam, 1 bg.

Rio de Janeiro, 2 t. 5 1/4 c.

Linseed Oil—

Canada, 4 t. 7 c.

Adelaide, 4 3 1/4

Logwood—

Canada, £66

Magnesium Sulphate—

Christiania, 100 bgs.

Manure—

Durban, 20 t.

Paint—

Talcabano, £85. 15s.

Painters' Colours—

Calcutta, qty.

E. London, "

Algoa Bay, "

Guayaquil, "

Santos, £22

Bombay, 37

Melbourne, 25

Paraffin Wax—

Bordeaux, £207

Christiania, 2 brls.

Spain, 466

King William's Town, 84

Marseilles, 60

Potassium Bichromate—

Canada, £174

Italy, 132

U.S.A., 460

Potassium Chlorate—

Sydney, £34

Potassium Cyanide—

Melbourne, £81

Sydney, 162

Sheep Dip—

Punta Arenas, £110

Soap—

Transvaal, 5 t. 9 1/2 c.

Sodium Bichromate—

Canada, 9 t. 13 1/2 c.

Italy, 3 3 1/2

Sodium Sulphate—

Calcutta, 4 t. 11 1/2 c.

Tallow—

Rotterdam, 17 t.

Treacle—

Bergen, 1 t. 6 c.

Christiania, 7 16

Stockholm, 10 14

E. London, 2 10

Yarnish—

Santos, £30

TYNE.

Week ending June 19th.

Alkali—

Hamburg, 5 t. 12 c.

Rotterdam, 8

Amsterdam, 34 17

Riga, 100 12

Christiania, 6 11

Alum Waste—

Gothenburg, 5 t. 7 c.

Antrocene

Rotterdam, 40 t. 15 c.

Antimony—

Copenhagen, 6 c.

Hamburg, 5 t.

Montreal, 7

Barium—

Venice, 10 t. 17 c.

Bleaching Powder—

Copenhagen, 23 t. 10 c.

Gothenburg, 105 2

Antwerp, 5

Hamburg, 19 19

Bergen, 14 18

Ancona, 19

Rotterdam, 30 3

Amsterdam, 14

Christiania, 45 3

Borax—

Montreal, 2 t. 2 c.

Carbolic Acid—

Amsterdam, 10 t. 13 c.

Castor Oil—

Bergen, 13 c.

Caustic Soda—

Gothenburg, 6 c.

Antwerp, 9 t. 17

Horstadt, 4 1

Hamburg, 38 11

Venice, 29

Helsingfors, 4 18

Copenhagen, 5 16

Amsterdam, 8 2

Christiania, 13 1

Montreal, 14 10

Copperas—

Copenhagen, 1 t. 1 c.

Lime—

Valencia, 180 t.

Linseed Oil—

Rotterdam, 12 c.

Litharge—

Antwerp, 2 t. 14 c.

Hamburg, 12

Amsterdam, 2 16

Gothenburg, 3 14

Christiania, 5

Riga, 10 2

Magnesia—

Hamburg, 6 c.

Montreal, 14

Manure—

Valencia, 39 t. 5 c.

Castillon, 20

Naphthaline—

Riga, 28 t. 1 c.

Paint—

Hamburg, 5 c.

Rotterdam, 15

Soap—

Bergen, 16 c.

S

PRICES CURRENT.

WEDNESDAY, JUNE 30TH, 1897.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary

Acids:—

	£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/10½	& 8/9
„ Glacial	„	40/-	
Arsenic S.G., 2000°	„	1	4 0
Fluoric	per lb.	0	0 3¼
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0 10
„ (Cylinder), 30° Tw.	„	0	3 0
Nitric 80° Tw.	per lb.	0	0 1½
Nitrous	„	0	0 1¼
Oxalic	nett	0	0 3½
Phosphoric, 1750°	„	0	0 11½
Picric	„	0	0 11
Sulphuric (fuming 50 %)	per ton	15	10 0
„ (monohydrate)	„	5	10 0
„ (Pyrites, 168°)	„	3	0 0
„ „ 150°	„	1	5 0
„ (free from arsenic, 145°)	„	1	7 6
Sulphurous (solution) S.G. 1025	„	3	0 0
Tannic (pure)	per lb.	0	1 2½
Tartaric	„	0	1 1
Arsenic, white powdered	nett	per ton	22 5 0
Alum (loose lump)	„	4	10 0
Alumina Sulphate (pure)	„	4	2 6
Aluminoferic	„	2	3 6
Aluminium (Ingot metal 98/99¾ %	nett	„	148 0 0
Ammonia, Anhydrous	per lb.	0	1 3
„ 880=28° B.	„	0	0 2¼
„ =24° B.	„	0	0 1¼
„ Carbonate	nett	„	0 3
„ Muriate	per ton	18	5 0
„ „ (sal-ammoniac) 1st & 2nd	per cwt.	33/- & 31/-	
„ Nitrate	per ton	32	0 0
„ Phosphate	per lb.	0	0 4½
„ Sulphate (grey) London	per ton	7	10 0
„ „ (grey) Hull	„	7	10 0
Aniline Oil (pure)	per lb.	0	0 6¼
Aniline Salt	„	0	0 6¼
Antimony	per ton	30	15 0
„ (tartar emetic)	per lb.	0	0 9
„ (golden sulphide)	„	0	0 10
Barium Chloride	per ton	6	12 6
„ Carbonate (native)	„	3	10 0
„ Sulphate (native levigated)	„	42/6 to 65/-	
Bleaching Powder, 35 %	nett	„	6 7 6
„ Liquor, 7 %	„	3	10 0
Bisulphide of Carbon	„	12	0 0
Chromium Acetate (crystal)	per lb.	0	0 6
Calcium Chloride	per ton	2	2 6
China Clay (at Runcorn) in bulk	„	15/- to 30/-	

Coal Tar Products and Dyes:—

Alizarine (artificial) 20 %	.. .. .	nett	per lb.	0	0	6¾
Magenta	.. .. .	.. .. .	.. .. .	0	3	9
Anthracene, 30 % A, f.o.b. London	.. .. .	per unit	per cwt.	0	0	6½
Benzol, 90's	.. .. .	.. .. .	per gallon	0	2	0
" 50/90	.. .. .	.. .. .	.. .. .	0	2	2
Carbolic Acid (crude 60°)	.. .. .	.. .. .	per gallon	0	2	0
" (crystallised 40°)	.. .. .	.. .. .	per lb.	0	0	7¾
" (liquid 95/97%)	.. .. .	.. .. .	per gallon	0	1	0
Creosote (ordinary)	.. .. .	.. .. .	.. .. .	0	0	2
" (filtered for Lucigen light)	.. .. .	.. .. .	.. .. .	0	0	2½
Crude Naphtha 30 % @ 120° C.	.. .. .	.. .. .	.. .. .	0	0	11
Grease Oils, 22° Tw.	.. .. .	.. .. .	per ton	2	15	0
Pitch, f.o.b. Liverpool or Garston	.. .. .	.. .. .	.. .. .	1	1	0
Solvent Naphtha, 90 % at 160°	.. .. .	.. .. .	per gallon	0	1	6½
Copper	.. .. .	.. .. .	per ton	49	0	0
" Sulphate	.. .. .	.. .. .	.. .. .	16	5	0
" Oxide (copper scales)	.. .. .	.. .. .	.. .. .	44	10	0
Glycerine (crude)	.. .. .	.. .. .	.. .. .	30	0	0
" (distilled S.G. 1250°)	.. .. .	.. .. .	.. .. .	60	0	0
Iodine	.. .. .	.. .. .	nett, per oz.	0	0	7½
Iron Sulphate (copperas)	.. .. .	.. .. .	per ton	1	10	0
" Sulphide (antimony slag)	.. .. .	.. .. .	.. .. .	2	0	0
Lead (sheet) for cash	.. .. .	.. .. .	.. .. .	13	2	6
" Litharge Flake (ex ship)	.. .. .	.. .. .	.. .. .	14	15	0
" Acetate (white .. )	.. .. .	.. .. .	.. .. .	22	0	0
" "						

Lime, Acetate (brown) (ex ship)	per ton	5	0 0
„ „ (grey) (ex ship)	„	8	5 0
Magnesium (ribbon and wire)	per oz.	0	2 3
„ Chloride (ex ship)	per ton	2	10 0
„ Carbonate	per cwt.	1	17 6
„ Calcined Magnesia	per ton.	9	0 0
„ Sulphate (Epsom Salts)	per ton	2	15 6
Manganese, Sulphate	„	16	0 0
„ Borate	per cwt.	2	10 0
„ Ore, 70 %	per ton	3	10 0
Methylated Spirit, 61° O.P.	per gallon	0	1 8
Naphtha (Wood), Solvent	„	0	2 9
„ „ Miscible, 60° O.P.	„	0	3 3

Oils:—

Cotton-seed	per ton	15	10	0
Linseed	„	16	5	0
Stearine	per ton	19	10	0
Phosphorus (yellow)	per lb.	0	2	2
„ (red)	„	0	2	8
Potassium (metal)	per oz.	0	3	7
„ Bichromate	nett per lb.	0	0	4½
„ Carbonate, 90% (ex ship)	per ton	16	12	6
„ Chlorate	per lb.	0	0	4
„ Cyanide, 98%	„	0	0	10½
„ Hydrate (Caustic Potash) .. 90 %	per ton	24	0	0
„ „ (Caustic Potash) 75/80 %	„	20	15	0
„ „ (Caustic Potash) 70/75 %	„	19	15	0
„ Nitrate (refined)	per cwt.	1	1	6
„ Permanganate	per cwt.	3	15	0
„ Prussiate Yellow	per lb.	0	0	5½
„ Sulphate, 90 % (ex ship)	per ton	9	15	0
„ Muriate, 80 % (do.)	„	8	10	0
Silver (metal)	per oz.	0	2	3½
Sodium (metal)	per lb.	0	2	11
„ Carb. (refined Soda-ash) 48 %	nett per ton	4	15	0
„ „ (Caustic Soda-ash) 48 %	„ „ „	4	5	0
„ „ (Carb. Soda-ash) 48%	„ „ „	4	0	0
„ „ (Alkali) 58 %	„ „ „	3	17	6
„ „ (Soda Crystals)	„ „ „	2	5	0
„ Acetate (ex-ship)	„ „ „	12	5	0
„ Arseniate, 45 %	„ „ „	14	7	6
„ Chlorate	per lb.	0	0	4½
„ Borate (Borax)	net, per ton.	16	0	0
„ Bichromate	per lb.	0	0	3¼
„ Hydrate (77 % Caustic Soda)(f.o.b.) net pr. ton	„ „ „	9	0	0
„ „ (74 % Caustic Soda)	„ „ „	8	2	6
„ „ (70 % Caustic Soda)	„ „ „	7	2	6
„ „ (60 % Caustic Soda)	„ „ „	6	2	6
„ „ (pure liquor 90° Tw.)	„ „ „	3	12	6
„ „ 77/78 % powdered (99 % hydrate)	„ „ „	12	15	0
„ Bicarbonate	„ „ „	6	10	0
„ Hyposulphite	„ „ „	5	0	0
„ Manganate, 25%	„ „ „	15	0	0
„ Nitrate (95 %) ex-ship Liverpool	per cwt.	0	7	6
„ Nitrite, 98 %	per ton	30	0	0
„ Phosphate	„ „ „	10	10	0
„ Silicate (glass)	per ton	4	10	0
„ „ (liquid, 100° Tw.)	„ „ „	3	10	0
„ Stannate, 40 %	per cwt.	3	2	9
„ Sulphate (Salt-cake)	per ton.	0	19	0
„ „ (Glauber's Salts)	„ „ „	1	7	6
„ Sulphide	„ „ „	6	15	0
„ Sulphite	„ „ „	5	0	0
Strontium Hydrate, 100%	„ „ „	8	0	0
Sulphocyanide Ammonium, 95 %	per lb.	0	0	6¼
„ Barium, 95 %	„ „ „	0	0	4½
„ Potassium	„ „ „	0	0	6¼
Sulphur (Flowers)	per ton.	7	10	0
„ (Roll Brimstone)	„ „ „	6	10	0
„ Brimstone: Best Quality	„ „ „	4	12	6
Superphosphate of Lime (26%)	„ „ „	2	5	0
Tallow	„ „ „	18	0	0
Tin Crystals	per lb.	0	0	4¾
„ English Ingots	per ton	66	10	0
Zinc (Spelter)	„ „ „	17	5	0
„ Chloride (solution, 100° Tw.)	„ „ „	4	17	6
„ Sulphate, Crystal	„ „ „	5	2	6

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Contents.

	PAGE		PAGE
Current Topics	17	Trade Notes	24
Mersey and Irwell Joint Committee ..	18	Tar and Ammonia Products	24
The Patent List	19	Miscellaneous Chemical Market ..	24
Abstracts of Latest Complete Specifi-		Report on Manure Material	24
cations	19	Liverpool Oil and Colour Market ..	25
Works' Effluents in Sewers	19	The Metal Markets	25
The Position of Sodium Nitrate ..	20	Hull Paint, Oil, and Colour Report ..	25
Beet Sugar in the United States ..	20	West of Scotland Chemicals	25
Wool Sorting and Anthrax	21	Tyne Chemical Report	25
The Teaching of Chemistry	21	New Companies	26
Reports of Companies	22	Imports	26
West Riding Rivers Board	23	Exports	26
Correspondence	24	Prices Current	32

LATE ADVERTISEMENT.

TENDER.

CORPORATION OF COVENTRY.

SURPLUS TAR.

THE Gas Committee of the Corporation of Coventry are prepared to receive TENDERS for the purchase of the Surplus TAR produced at their Works, Coventry, for One Year from 1st July 1897.

Make about 2,000 tons per annum.

Tenders, stating price per ton delivered into boat, to be addressed to the Manager, and marked "Tender for Tar."

The Committee do not bind themselves to accept the highest or any tender.

GEO. WINSTANLEY, Assoc. M.I.C.E.,

Gasworks, Coventry,
1st July, 1897.

Manager.

Notices.

All communications for the *Chemical Trade Journal* should be addressed, and Cheques and Post Office Orders made payable to—

DAVIS BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

"Expert, Manchester."

NATIONAL TELEPHONE, 3060.

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Trade Advertisements, Announcements in the Directory Columns, and all Advertisements not prepaid, are charged at the Tariff Rates, which will be forwarded on application.

Advertisements intended for insertion in the current week's issue should reach the office by **Thursday morning** at the latest.

CURRENT TOPICS.

STORING CALCIUM CARBIDE.

IT is a pity that calcium carbide, being under the Petroleum Act, should be practically doomed to occupy the unenviable position of an industrial product that would prosper if it could, only it is not allowed.

When dealing with this subject some time back we pointed out in several ways how the insurance companies had over-estimated the risks attached to the storage of the carbide, but, though efforts were made in various quarters to correct the first erroneous impression created by the insurance companies, they were not successful, and the matter was placed in the hands of the Public Control Department of the London County Council, the right of granting or refusing licences being vested in this department. They evidently seem to think that calcium carbide is more dangerous than petroleum, or rather the substitute that does duty for it in this country, for in the case of seven recent applications for storage licences, one of which was for the storage of the carbide, the six petroleum licences were granted, but that for the carbide was refused because the proposed arrangements were unsuitable. This is not so exactly encouraging, but we must hope for the best, and possibly time may temper the feeling against calcium carbide.

THE U.S.A. TARIFF.

The settlement of the tariff rates is progressing steadily. Concerning bleaching powder, in which the interest of the chemical trade largely centres, the latest information states that the Senate has voted a duty of one-fifth cent per pound.

In this way no doubt they think to pacify both parties, as, although it has not been restored to the Free List, a drop from one quarter to one-fifth of a cent is a concession. They make no bones about the motives that have led to this impost, one of the chief pleas being that the United Alkali Co., Ltd., should be made to pay something towards the revenue, in return for the business they do in bleach.

The long-debated coal tar schedule has been finally disposed of at a special and private meeting of the Finance Committee, and there is now no doubt that the schedule as placed in the tariff bill will be to the following effect:—Coal tar colours, 30 per cent.; preparations (not medicinal), 20 per cent.; medicinal preparations, 25 per cent. Blacks are to be taken from the free list and will come in at 30 per cent., but the free list will admit alizarine and anthracene colours. The latter are imported by one concern only, and this proviso is doubtless thrown in to compensate it for the loss of free "naphthazarin black," which, in spite of its endeavours to the contrary, has been relegated to the dutiable list in deference to public clamour against discrimination.

A MATTER OF PRIORITY.

A few weeks ago we made reference in the *Journal* to a paragraph that formed part of the report of one of the

district alkali inspectors concerning the first user of oxygen as a restorative in cases of "gassing." In this report the honour is attributed to Mr. Windus, of Bristol. Without wishing to discount this gentleman's commendable endeavours in this connection, the statement struck us as rather remarkable when compared with what had been said in our article of October last concerning Mr. Douglas Herman.

As we were certainly inclined to agree with the author of the statement that Mr. Windus was not generally known to have had the advantage of priority, we purposely gave further publicity to the announcement, to see how outside opinions would agree with the *data* on which we had based our testimony to Mr. Herman, and seeing that these merited encomiums would seem to be challenged by the way the claim of Mr. Windus is introduced in the Inspector's report, we think it will be as well to state the facts from which we drew our conclusions as to priority.

In regard to the notion of using oxygen in this way, Mr. Herman, it seems, had turned the matter over in his mind about nine years ago, and actually first provided an oxygen bottle for use on the works in April, 1888.

According to Mr. Windus's own words he had his first cylinder of oxygen on October 25th, 1893. This also was the date of his first trial of oxygen as a remedy.

The actual dates on which Mr. Herman first had occasion to use his oxygen bottle in a serious case were Oct. 11th and 12th, 1893, but he had made use of it on minor occasions several times before this. It seems to us, therefore, that Mr. Herman clearly forestalled Mr. Windus, both in the provision and actual use of oxygen as a resuscitant. Apart from our own inquiries these facts do not lack outside confirmation, as the dates can be checked by the entries in the "Sick Club" books of the works, and in other ways.

The matter is not a very great one, and we think Mr. Windus would be one of the first to agree with us that this simple correction of facts could in no way be construed into an attempt to depreciate his own useful work, as well as be among the first to wish that honour should be given where honour is due.

It is a pity, however, that this matter should have found its way, as an official record, into a Government Blue Book, where it must ever remain for reference, despite all outside disclaimers. The more particularly is this regrettable in the face of the unequivocal award of priority made in our article last October, because it would have been an easy matter to ask us to test the accuracy of our *data* with the facts of Mr. Windus's claim. The upshot would have simply been a mutual understanding and appreciation of the circumstances, and rendered unnecessary this censure of the censor's censorship.

MANCHESTER STEAM USERS' ASSOCIATION.—The annual meeting of the Manchester Steam Users' Association was held on Tuesday, at the offices, Mount Street, Manchester. The number of members of the Association is 1,870; boilers insured, 6,017; and the yearly subscriptions and special service fees amount to £13,171. 18s. The past year, the report stated, has been one of continued progress. The surplus of the twelve months amounted to £865. The assets of the Association now stood at £18,901. Mr. A. Dugdale (Blackburn), who presided, in moving the adoption of the report, referred to the loss the Association had sustained by the death of Mr. Lavington E. Fletcher, the late engineer. Mr. Henry Harrison (Blackburn) seconded. In doing so he alluded to the Boiler Inspection and Registration Bill now before Parliament in charge of Sir William Houldsworth, M.P. The object of the Bill was to call upon manufacturers to have their boilers inspected by whom they think fit, and thus prevent explosions and save human life. The report was adopted.

MERSEY AND IRWELL JOINT COMMITTEE.

THE monthly meeting of this authority was held on Monday, Sir J. T. Hibbert presiding.—Mr. John Brierley submitted a report by the Consulting Sub-committee, with regard to the position of various District Councils, most of which were allowed further time to complete their works. The report also contained analyses by Sir Henry Roscoe of effluents from the sewage works of Manchester and Salford, both of which were described generally as bad effluents.

Mr. R. W. Jones produced a sample of the Salford effluent, taken by himself at the same time as the sample for official analysis. He said it was a remarkably good effluent. Mr. Jones also produced an analysis made by Mr. Carter Bell, which was of a much more favourable character than that made by Mr. Scudder, as representing Sir Henry Roscoe.

Mr. Scudder explained that the sample looked well because it contained free lime, which had prevented secondary decomposition.

A motion that a copy of the analyses in question be sent to the respective Corporations was adopted.

Mr. J. Brierley moved that the reports of Sir Henry Roscoe and Mr. R. A. Tatton upon the question of artificial filtration, submitted to the last meeting, should be forwarded to the Local Government Board, with a request that the Board give them their very careful consideration, and communicate with the Joint Committee on the subject.

A DEPUTATION ON FILTRATION TO THE L.G.B.

Mr. R. W. Jones moved as an amendment that, in addition to sending the reports, the Committee should appoint a deputation to wait upon the Local Government Board, with a view to showing the objections to a hard and fast rule being laid down with regard to land filtration.

Dr. Hewitt seconded. He thought they should urge the Local Government Board, in cases where suitable land could not be obtained, to sanction artificial filtration. The hard and fast rule laid down by the Board that local authorities and manufacturers should purchase land for sewage filtration, whether the land was suitable or not, had led to a great waste of money. Land filtration where the land was suitable was no doubt the best system, but where suitable land could not be obtained the Local Government Board should sanction artificial filtration.

Mr. Alderman M'Dougall thought they were hardly in a position yet to assume that artificial filtration was thoroughly successful. The two reports did not quite agree on the point, or at any rate the one did not go quite so far as the other.

Mr. Haslam thought it would be a mistake for the Committee to depart from the policy they had hitherto pursued of not recommending any particular system. What would be their position if the Local Government Board, acting on their representations, sanctioned a scheme which it was afterwards found would not work? The other towns and authorities had been forced by the Local Government Board to buy land, and it would be unfair to them if Manchester and Salford were to receive exceptional treatment.

Mr. Alderman Thompson said Manchester was in a very difficult position. It was the duty of the Committee to get as good an effluent as they could from the various local authorities, but it was not the duty of the Committee to enforce impossibilities. The Corporation of Manchester was doing its utmost to meet the wishes of the Committee, but it was overpowered by facts of which it could not get rid. It was impossible to meet the difficulties of the sewage problem by filtration through land, and as to artificial filtration, the two tanks constructed under the supervision of Sir Henry Roscoe were steadily diminishing in capacity as time went on, and to carry out a scheme on these lines would be so terribly expensive that no one could contemplate it who had any regard for the ratepayers. He could not help thinking that the time was coming when the whole subject would have to be reviewed. So far as they could see at present it was simply impossible for the Manchester Corporation to keep up a continuous effluent good enough to meet the full requirements of the Committee.

Mr. Vernon K. Armitage predicted that Manchester and Salford would give the Committee more trouble than all the other authorities in the watershed put together. He thought it would be a mistake for the Committee now to change the policy they had pursued in the past.

Mr. Alderman Hopkinson thought there could be no harm in pointing out to the Local Government Board that so far as Manchester was concerned, it was simply impossible to get land for filtration.

The Chairman thought they should do their utmost to assist Manchester and Salford in the difficult position in which they were placed.

After further discussion the motion and the amendment were joined and became the finding of the Committee.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Imitation Marble. J. M. Danielli. 14,970. June 22.
Negative Electrode for Zinc Accumulators. S. Pitt. 15,013. June 22.
Improvements in Storage Batteries. A. Heinemann and W. Schäfer. 15,047. June 23.
Artificial Stone. P. Rückert. 15,050. June 23.
Manufacture of Soaps. A. Jolles. 15,156. June 24.
Smoke-consuming Furnaces for Locomotives. K. Marek. 15,157. June 24.
Improvements in Bleaching. J. H. Gartside. 15,192. June 25.
Treating Ores Containing Precious Metals. S. Alley. 15,203. June 25.
Artificial Rubber. F. Fenton. 15,269. June 26.
Improvements in the Manufacture of Colouring Matters. W. McCowan. 15,290. June 26.
Finishing Woven Belting. F. Reddaway. 15,291. June 26.
Filtering Water and other Liquids. E. Cortes. 15,312. June 26.
Improvements connected with Tanning. A. Mario. 15,352. June 26.
Carbureting Illuminating Gas. E. F. J. C. Bauweraerts. 15,369. June 26.

ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

These abstracts are specially prepared for the Chemical Trade Journal, and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.

A Process for Removing Carbonic Acid and Hydrogen Sulphide from Ammoniacal Liquor. Dr. A. Feldmann, 1, Dechanatstrasse, Bremen. Eng. Pat. 10,507. April 27, 1897.

The process is based upon the observation that by heating gas liquor to at least 94°–97° C. the removal of the carbon dioxide and hydrogen sulphide is effected. The process is carried out in a column apparatus of the usual type, which is illustrated, the heat being derived either from direct steam or a steam coil. One advantage is that in the preparation of concentrated ammoniacal liquor no separation of solid ammonium carbonate takes place until the liquor is concentrated up to 30% ammonia, whereas with the older process this complication used to occur at 16 to 18% of ammonia. Also when working to form spirit of sal-ammoniac there is a saving of 50 to 60% of lime.

Improvements in Processes for Reducing Aluminium. F. A. Gooch, 169, Edwards-street, City of New Haven, Connecticut, U.S.A. Eng. Pat. 6,151. Mar. 9, 1897.

Alumina will not dissolve in a bath of molten sodium fluoride, but if a small amount of the hydrated chloride of aluminium (having the formula $Al_2Cl_6 \cdot 12H_2O$) is added, the chloride and also the alumina in suspension dissolves. The hydrated oxy-chlorides have the same effect. The process is carried out in a tumbler-shaped iron bath set in the arch of a furnace. It is lined with carbon, and several anodes are suspended in the middle of the pot so as to be partially immersed in the molten bath of sodium fluoride, etc. On a current of four to ten volts being sent through the bath, metallic aluminium is deposited on the cathode—i.e., the carbon lining to the bath.

The ingredients used in preparing the bath are preferably mixed in the following proportions:—Sodium fluoride 100 parts, hydrous aluminium chloride 125 parts, and alumina 8 parts. The chloride may be introduced before or after the bath has become molten, but it is preferable to add it after the sodium fluoride has been melted and contains the alumina in suspension, as there is less hydrochloric acid gas given off from the bath, and consequently the chloride is more effective.

Process and Apparatus for the Production of the Acetates of Lead, Copper, and the like. A. Schmidt, 49, Kölnischestrass, Cassel, Germany. Eng. Pat. 7,193. Mar. 19, 1897.

The preparation of sugar of lead and verdigris (sub-acetate of copper) is tedious. To hasten the preparation it is proposed by the patentee to expose the metal, as the case may be, to the action of oxygen and the vapour of dilute acetic acid, in suitable apparatus. The apparatus, which is illustrated by two figures, consists of two tanks, with a steam-heating chamber at the bottom, where they are connected with a drum pump. The upper portions are also connected by a pipe. One is filled

about half-full of lead shot or copper chippings and a 45 to 50% solution of acetic acid added until the vessel is three-quarters full. The contents are heated to about 60° C., and when the acetic vapours have displaced the air the manhole is closed. The liquid is then pumped into an adjoining vessel of similar construction, while oxygen is admitted up to a pressure of about 30 lbs. to the square inch. When the acetic vapours have displaced the air in the second vessel, the manhole of this one is also closed, and by opening the valve on the top connecting pipe the pumping is completed, the displaced acetic vapour passing back into the first vessel and dissolving the oxide on the metal. This process is continued until the liquor is sufficiently saturated.

A Process for the Production of Oil from Peat. Mrs. Dr. F. Rapp-Roseuthal, 104, Friedrichstrasse, Berlin. Eng. Pat. 9,374. April 12, 1897.

Peat, such as is found in the estuary near Odessa, is boiled (with the addition of water if necessary) for an hour, and then the oil expressed in bags. The oil is very penetrative, and does not stop the pores of the skin. It is suitable for use as an embrocation for rheumatic and like complaints. The peat must be utilised where it is found, as if it is transported it becomes dry and useless. The oil when once extracted, however, remains an active principle.

Improved Process for Producing Oxalic Acid. G. F. Zacker, 27, Steindamm, Hamburg. Eng. Pat. 2308. Jan. 28, 1897.

In order to overcome the familiar disadvantages usually connected with the production of oxalic acid by digesting sawdust or other forms of cellulose with caustic alkali, it is proposed to conduct the process *in vacuo*, and also slightly modify the details of manipulation. In this way it is claimed that in the formation of formic acid and empyreumatic compounds, heavy loss in the mother lyes and such like difficulties are avoided. The procedure is as follows:—The sawdust is placed in a jacketed vessel which can thus be either heated or cooled. The temperature is raised to about 70° C., the vacuum pump having been connected so as to exhaust the containing vessel. Caustic lye of about 45° Bé, heated to the same temperature, is then introduced, the whole being stirred continuously. The heat is now raised to 80° C. as a maximum, 200° C. being too hot to give good results, if the batch is not wholly spoiled. When the digestion has proceeded long enough a little air fortified with oxygen or other oxidant such as hydrogen or sodium peroxide is drawn in by the vacuum to destroy the small amount of humus matter present. This oxygenation is conducted slowly so as to avoid a serious rise in temperature, on the correct regulation of which the success of the process depends. The mass is lixiviated in the vessel, giving an almost colourless liquor, very free from alkaline carbonate, which is forced into an open stirring cylinder, thinned, and the necessary amount of lime added to precipitate the oxalic acid as the oxalate. This, when separated, naturally contains but little carbonate of lime since alkaline carbonate scarcely existed in the solution, while the oxalate being very white and pure yields good white oxalic acid when decomposed with vitriol in the usual way.

WORKS' EFFLUENTS IN SEWERS.

THE LEEDS REGULATIONS.

THE Streets and Sewerage Committee of the Leeds Corporation have decided that the following resolutions of the Committee be extended to include the liquid trade refuse from all manufactories (if any) which the Medical Officer of Health is of opinion would unduly interfere with the purification of the sewage, or which would tend to produce an effluent injurious to agriculture if applied thereto, or which would create a nuisance in the sewers injurious to health, or would be calculated to damage the structure of the sewer:—

That the liquid trade refuse from tanneries and leather works be permitted to be discharged into the public sewers on the conditions:—1. That an examination shaft be built in each manufactory over the drain discharging into the sewer, of such dimensions and in a manner to enable the Medical Officer of Health to take samples from the passing liquid refuse whenever he may desire to do so. 2. That the exercise of this permission be only commenced and continued after the Medical Officer of Health shall have certified that such shaft has been built to his satisfaction, and that the works for preliminary depuration of the liquid refuse, if any, have been made, brought into operation, and be continued to his satisfaction. That no certificate be issued by the Medical Officer of Health in accordance with the previous resolution, without the sanction of the chairman or deputy-chairman of this Committee.

It was also decided that, in addition to the foregoing, the following conditions be imposed:—

That, wherever required by the Medical Officer of Health, works for the preliminary depuration of liquid refuse be carried out by the manufacturers. That the liquid refuse from all breweries, in addition to being subject to the foregoing requirements and to those of the Medical Officer of Health, shall be passed through a sieve of $\frac{1}{8}$ of an inch mesh, to be provided by the owner or occupier of the premises.

THE POSITION OF SODIUM NITRATE.

REVIEW OF THE HALF-YEAR.

IN summarising the position of sodium nitrate, Mr. Thomas Aikman, junr., in his usual half-yearly review says:—"The chemical trade has latterly shown signs of more animation, and the effects of restricted production are becoming more apparent in improved values of some products. Agricultural prospects were marred by an unusually wet and late spring throughout the United Kingdom and continent. Crop prospects, generally, have considerably improved during the past month, and with continued suitable weather, an average, though late harvest, is still generally probable. Prices in most branches continue unremunerative, the advanced value of cereals, established last autumn, not having been maintained, but prospects again begin to look more hopeful in this branch. The pernicious effects of the increasing French and German bounty system, in unduly fostering the export of beet sugar, at the cost of their home consumers, have been more than ever evidenced by the further fall in value, which is greater than the increased bounty recently conceded. Price, which in the spring of last year touched 12s. 6d. to 13s. per cwt., has, during the present spring, ruled between 9s. and 8s. 6d. per cwt., and with an enlarged area under beet root cultivation, the prospects for this industry in the near future are less hopeful than in any past year, should a full crop be secured. Reports of the agricultural prospects generally in the United States, Canada, and other countries are satisfactory. The fertiliser trade has continued in a most depressed condition; the volume of business has been fair, but prices have ruled lower than ever, and have been unremunerative to nearly all. Nitrate of Soda showed a considerable falling off in the early months, but with the late season has finished with only 2 per cent. short in volume as compared with the figures of the previous season, but price has touched the lowest recorded point of under 7s. per cwt. during the height of the consuming season, the result of an excess in supply and of speculative realisations. Further efforts to reduce the now regulated supply during the next season, to a point under, rather than over, the anticipated requirements, if, as is hopeful, they prove successful, may lead to a slightly better range of price during the next consuming season. As over one-third of the world's consumption is for sugar beet, much depends on this industry. Sulphate of ammonia, which, at this date last year, had broken its record at 7s. 9d., has, during the present spring, touched 7s., and is now 7s. 6d. per cwt. It has attracted considerable attention as a rival to nitrate, its supply in Europe being now over a third of the volume of nitrate supply. The clearing-off of the stocks held over last year and the probability of a check in the recent years increasing rate of production point to a better outlook should consumption of nitrogenous manures continue on the present scale. Other sources of nitrogen, including guanos of different descriptions, mark a similar decline, and have been in small demand. Potash salts continue to be regulated by the German producers. The value of phosphate remains in the same depressed state. Frieights generally have continued at a low level.

THE CONSUMPTION.

The six months' consumption from United Kingdom ports reaches about 77,000 tons, against 80,000, 81,000, 85,000, 72,000, and 84,000 in the same six months 1896 to 1892. The stocks at date are about 16,000 tons, against 21,000, 19,000, 6,000, 4,000, and 18,000 at date in same years. From continental ports the deliveries during the six months reached about 604,000 tons, against 613,000, 559,000, 543,000, 454,000, and 506,000 in the same six months of 1896 to 1892, and stocks are about 100,000 tons, against 106,000, 60,000, 18,000, 15,000, and 103,000 tons at same period in these years. Germany and France are on about the same scale as last year, while Belgium shows a very small decrease. During the first quarter, however, these countries showed about 30 per cent. in arrears, made up by increased deliveries over each of the succeeding months. The six months' consumption in the United States and California has been under 50,000 tons, against 60,000, 55,000, 45,000, 45,000 and 45,000 tons in the same six months 1896 to 1892. The visible supply, stock and afloat, is about 40,000 tons, against 30,000, 40,000, 30,000, 45,000, and 40,000 tons at date in same years. Other parts of the world have absorbed about 10,000 tons from direct imports during the same period. Stocks in consumers' hands, and in the interior of the Continent are not believed to be much, if any, in excess, on the aggregate of what they were at date last year. The consumption throughout the world, during the period July 1 to June 30, may be therefore estimated for 1896-97 at 1,060,000 tons with an average price of 7s. 10d.; for 1895-96 at 1,100,000 tons with 7s. 10d.; for 1894-95 at 1,040,000 tons with 8s. 4½d.; for 1893-94 at 975,000 tons with 9s. 7d.; for 1892-93 at 840,000 tons with 9s. 6d.; for 1891-92 at 870,000 tons with 8s. 10½d.; for 1890-91 at 945,000 tons with 8s. 7d.; 1889-90 at 930,000 tons with 8s. 4d.; for 1888-89 at 730,000 tons with 9s. 10d.; for 1887-88 at 670,000

tons with 9s. 4d.; for 1886-87 at 510,000 tons with 9s. 9d.; for 1885-86 at 440,000 tons with 10s. 6d.; for 1884-85 at 490,000 tons with 9s. 9d.; for 1883-84 at 530,000 tons with 10s.; for 1882-83 at 430,000 tons with 12s. 3d.; for 1881-82 at 350,000 tons with 13s. 9d.; for 1880-81 at 250,000 tons with 14s. 6d.; for 1879-80 at 170,000 tons with 16s. 3d.; for 1878-79 at 280,000 tons, with an average price of 13s. 6d. per cwt. The visible supply for Europe consists of about 116,000 tons stocks and 175,000 tons afloat, against 127,000 and 255,000 tons at date last year, 75,000 and 220,000 in 1895, 25,000 and 225,000 in 1894, 19,000 and 208,000 in 1893, and 122,000 and 185,000 in 1892. The deliveries, July to December, reached last year 262,000 tons, in 1895 275,000, in 1894 287,000, in 1893 262,000, and in 1892 221,000 tons. The shipments, January to June, have been about 315,000 tons to Europe, and 50,000 tons to the United States, against 435,000 tons and 50,000 tons in 1896, 430,000 tons and 55,000 tons in 1895, 410,000 tons and 45,000 tons in 1894, 330,000 tons and 65,000 tons in 1893, and 365,000 tons and 40,000 tons in 1892 during the same period. The production in the first six months is approximately 500,000 tons, against 650,000 tons in 1896, 600,000 tons in 1895, 475,000 tons in 1894, and 425,000 tons in 1893, during same period. For the next nine months shipments to all countries under the combination of producers, should the pending arrangements be carried out, are unlikely to exceed 775,000 tons, against 785,000 tons during same nine months in 1896-97 and 1,010,000 tons in the same period 1895-96. With the world's visible supply to-day fully 80,000 tons less than that of June 30 last year, and 10,000 tons less than 1895, a similar consumption to that of the past twelve months would practically lead to the absorption of the present stocks, and of the arrivals during the next twelve months, whereas in the past two years the supply for same period, including stocks carried over, has proved from 15 per cent. to 25 per cent. in excess of requirements, and has largely been the cause of the present depressed value. Present low prices are unremunerative to many producers. The duty remains at the equivalent of about 2s. 4d. per quintal, but a reduction of 1½d. to 2d. per quintal in the railway transit rates to shipping ports has been current since January. Several producers have been compelled to cease working at the present unprofitable rates.

BEET SUGAR IN THE UNITED STATES.

THE manufacture of beetroot sugar has made considerable progress in the United States since its first trial in 1830, when but a few pounds were manufactured.

There are now eight factories in operation—three in California, two in Nebraska, one in New Mexico, one in Utah, and one in Virginia. Four additional factories are approaching completion, namely, one at Rome in the State of New York, which has been removed from Canada, one at Menominee Falls, Wisconsin, one at Alamosa, California, and the last at Salinas City, California.

The following table shows the growth of the production of beetroot sugar in the United States from the year 1830 until 1896:—

Year.	Quantity.
1830	A few hundred lbs.
1831-37	None.
	Lbs.
1838-39	1,300.
1839-62	None.
1863-71	300 to 500 lbs. per annum.
	Tons.
1872	500
1873	700
1874-77	Under 100 per annum.
1878	200
1879	1,200
1880	500
1881-82	Under 500
1883	535
1884	953
1885	600
1886	800
1887	255
1888	1,910
1889	2,600
1890	2,800
1891	5,359
1892	12,091
1893	20,453
1894	20,443
1895	30,000
1896 (estimated)	40,000

A trial was made to cultivate beetroot in Lancaster County, in the State of Pennsylvania, but failed. The same may be said of the production of sugar from sorghum.

WOOL-SORTING AND ANTHRAX.

THE Departmental Committee appointed to inquire into the conditions of work in wool-sorting and other trades in which anthrax is alleged to occur have issued their report. As to wool-sorting, they state that experience goes to show that British and certain colonial wools are innocent, so far as anthrax is concerned. Of the remainder, some are more dangerous than others, and different degrees of precautions are therefore necessary. Special danger attaches to "fallen fleeces," that is, wool or hair plucked from the body of a dead animal which may have died from anthrax, in which case the fleece would be laden with spores capable of lying until conditions favourable to germination occur. Exporters are aware of the suspicion of importers with regard to this class of fleece, and a good deal of concealment is practised by the former in mixing the bad in the midst of bales of good wool. The opening of bales should therefore be entrusted only to men skilled in judging the quality and condition of the material, and where any taint is discovered the whole bale should be subjected to preventive measures. Bales of alpaca, Pelitan, East Indian, cashmere, Persian, and camel hair, being usually dirty, even if not actually dangerous, should be opened over a fan in rooms separate and distinct from sorting-rooms, and, together with mohair, should be sorted in rooms provided with extracting fans and shafts, by which the dust may be drawn downwards away from the sorters. The committee attach the greatest importance to the cleanliness of the sorting rooms, and further suggest that no one shall be allowed to sort if he has an open cut or sore upon any part of his body. To meet such cases employers should be called upon to keep at hand requisites for treating scratches and slight wounds. Washing accommodation should be provided in or near the sorting rooms, and the clothing and food of the sorters should be kept outside the sorting room. Much depends upon the efficiency of the down draught through the sorting board, where dangerous and dusty wools are being handled, and the current should be diffused over the whole surface from which dust tends to rise. The proper standard of efficiency is not the velocity of the current, but rather the volume of air removed, and 25 cubic feet per minute is proposed as a proper minimum. This or more is almost invariably effected where the mouth of the exhaust pipe has not been unduly contracted or the tube allowed to become choked. The mouth should not be less than four inches in diameter, and this, with the volume of air mentioned, would give a velocity of 300 feet per minute. The committee are of opinion that workers in the wool-combing industry can be sufficiently protected by the existing law, and that no special rules, beyond these suggested for the processes of opening and sorting, wherever carried on, are needed.

THE TEACHING OF CHEMISTRY.

BY GEORGE LUNGE, Ph.D.

THE abstract of this paper, which we gave in a recent issue (No. 526, p. 415), as being a contribution to the International Congress on Technical Education, showed that the paper contained much that deserved fuller treatment, and we are now able, through the courtesy of the author, to give the paper *in extenso*. It runs as follows:—I have on various occasions given utterance to my views on the most suitable course of education for technical chemists; also in an address delivered before the Chicago International Congress of Chemists. (*C.T.J.*, 342, p. 373.) There is all the less reason for repeating in detail what I formerly said on that subject, as I agree in the main with the numerous English chemists who have recently given to the public their ideas thereon. More particularly I agree with the views pronounced by Professor H. E. Armstrong in his pithy letters to *Nature*, written only a few months ago. In a few words: In order to raise English chemical industry to the foremost rank which is disputed to it at present in several important branches, it is necessary that the technical management of chemical factories should not be left in the hands of "rule-of-thumb" men, but should be entrusted to real chemists. These men should have a much fuller education than the majority of chemists seem to obtain at present in Great Britain, which means that they must spend more time and money on their training than they generally do. Before entering on their proper professional study at college, they should receive a more suitable general education, in which the "classics" need not be entirely left out, but must take a secondary place in comparison with modern languages, mathematics, drawing, and the elements of science. At college the student should receive a thorough training in scientific chemistry, taking this in its widest meaning, not merely as a "testing" business. Next to this, but not to the same extent, he should be taught physics, mineralogy, technology, mechanics, and the elements of engineering. Everything else is more ornamental than useful; but I am the very last to say that the student should confine himself only to the latter.

Nobody in these times of ours is likely to turn out a first-class chemist, worthy of being later on put in charge of a large factory, who has not tried his hand in original research. This has been pointed out with such cogency and emphasis by many authoritative voices in England (in Germany it has long been held as an article of faith) that I may abstain from dilating on that topic.

There is not quite so much agreement on the point whether technical chemists should be taught at college technology and the elements of engineering. Most people would take this as a matter of course; but there are influential voices to the contrary. We meet with such in the Report on the Teaching of Chemistry, made to the Technical Education Board of the London County Council in November, 1896. One gentleman declares the teaching of technological chemistry of no value whatever for chemical industries or for the pupils. Another declares that, although he had no preliminary technical training, and had been through theoretical courses only, he found himself able to cope with anything that cropped up when he entered manufacturing practice. Both gentlemen are eminently practical men, for whom I, like all the world, entertain the greatest respect, but in the present case I cannot follow them, and I believe that their experience is too one-sided. I, for my part, trust that I shall not be judged arrogant for assuming my natural capability to be up to the average, but my experience has been as follows: Having gone through a complete course of scientific chemistry and allied subjects (I rejoice to have had Bunsen and Kirchhoff as teachers), and having afterwards entered upon a technical career, I did not find myself "able to cope with anything that cropped up in practice," but I had to spend immense trouble and time, and to pay serious "Lehrgeld" for acquiring those elements of mechanical and technological knowledge which students now obtain as a matter of course in a good technical college. And this experience of my own agrees with so much else which I have observed in later life that I feel bound to retain my view of this subject as before stated. Nor do I stand alone in that. Not to speak of the practice of all the continental Polytechnics, which after all, have some results to point to, great efforts have recently been made to introduce those technological subjects even at the German Universities, as it is felt that in that respect they are suffering under a drawback in comparison with the Polytechnics. A very forcible speech was delivered on April 28th of this year, in the Prussian House of Commons, by Doctor Böttinger, the head of one of the largest chemical manufactories in the world, with a staff of more than a hundred chemists (the *Farbenfabriken* at Elberfeld). Dr. Böttinger strongly demanded the establishment of more professorships of technological chemistry, also at the old Universities, in order to maintain the prominent position of Germany in the chemical industry, and the Government made a very encouraging reply to this.

It is quite intelligible why some large chemical manufacturers do not care very much about a preliminary study of technological subjects on the part of their chemists. At their colossal works they need specialists for each branch, and they cannot do without a staff of fully trained engineers, so that their chemists are not called upon to do any but strictly chemical work. Some owners of works may not even like their chemists to get too much insight into the practical and mechanical part of the manufacturing operations, for reasons which need not be dwelled upon here. But that cannot be our standpoint, as teachers, nor, do I venture to say, is it in the interest of the nation as a whole that a trade should be monopolised in a few hands, as it is the object of "keeping everybody to his last." On the contrary, we aim at educating our pupils in such manner that they can turn their energies into practical channels at any opportunity which may offer itself; for this purpose they must be able to cope with mechanical and technical problems at the outset, and they must be taught to *think technically*, not merely as test-tube men. Of this I may be allowed to give an illustration from a huge industry which is after all quite as much a branch of applied chemistry as, say, alkali making, viz., the manufacture of iron and steel. Does anybody maintain that the enormous strides made in this industry in our own generation would have been possible if the iron-masters and their assistants had been brought up on a diet of pure chemistry and physics, leaving all the practical part and the engineering to be either performed by non-chemical engineers, or picked up at hap-hazard later on by themselves, instead of their going through a thorough training in the technology of metallurgy at mining schools or the like? This *reductio ad absurdum* is perhaps not quite so apparent and absolute in other branches of the industries built upon a chemical basis, but in my humble opinion it applies there as well. I cannot consider it as an accidental coincidence that Germany, which had been one of the leaders in theoretical chemistry for a long time past, without developing a chemical industry commensurate with it, should have attained to such prominence in the same industry precisely in the period when the establishment of Technical High Schools had provided her with a number of chemists, trained in something else than pure science. It is really unnecessary for me to point out that such a training in *pure science*, and that of a most thorough kind, is the indispensable forerunner of the teaching of *practical subjects*, but,

although speaking *pro domo*, I cannot help saying that *technological* chemistry has also amply proved its right of existence, and its great importance for the progress of chemical industry.

I have hitherto had only those in mind who aspire to filling the higher positions in chemical works, and ultimately hope to become themselves managers or owners of factories. Of course, only a few can ever reach that goal, and the great majority must content themselves with obtaining intermediate positions, but if they have honestly worked during their college time they may trust not to be left always in the condition of "testing-slaves," but to be promoted to manage some part or other of the real manufacture. According to the way they perform that work they will have a chance of getting higher and higher. Such promotion is, on the Continent, now confined to trained chemists, and I believe it is also more common than formerly in England to make chemists managers of chemical works. So long as this is not a recognised principle, it is in vain to hope for retaining a foremost rank in chemical industry. It is another question whether it is necessary or useful for that purpose, as it is sometimes claimed, that the foremen, or even the common workmen, should possess a certain knowledge of chemistry and technology, such as may be imparted at Board schools or at night classes for adults. I am afraid that such knowledge is quite useless to ordinary workmen, who have simply to do as they are told, and who may do more harm than good by trying to apply a superficial idea of the nature of the operations which they have to perform, without possibly having a real insight into them. I do not even think that, apart from isolated exceptions, such knowledge is much good to the foremen, whose duty it is to carry out their instructions and to see that the men do their work as prescribed by the staff, but who are not to meddle with the chemical process itself. Both classes of men may have valuable suggestions to make concerning apparatus and other outwardly-visible points, but even if they have learned as much chemistry as they have had a chance to do in the ordinary way, it is most unlikely that they will be able to find out any improvements in the *chemistry* of the process. At all events, in Germany, even in those factories where the work is carried on with the greatest chemical refinement, the foremen and ordinary workmen are neither required nor even desired to know anything of chemistry. Formerly, it happened sometimes that one of the men, after getting such a smattering of chemistry as he was able to obtain by evening schools and the like, was driven on by an irresistible impulse to rise from the ranks, to supplement his deficiencies by hard work, and to become a successful chemical inventor. But such a contingency has become more and more scarce with the widening of the area of science and the increasing difficulty of mastering it, and it really seems a great waste of time and means to give some superficial chemical teaching to tens of thousands of workmen on the remote chance that one of them may have some real benefit of it, while at the same time many hundreds of educated men are receiving a really efficient training in the same direction, many of whom cannot find properly remunerated places owing to a great extent to the cheap labour of "bottle-washers."

Another outspoken word I have done. Bodily exercise is an excellent thing; we all know *mens sana*, &c., and *sport* is a first-class inducement to bodily exercise. But even a good thing, pursued to excess, turns into its opposite. No sane person denies this theory; everybody agrees that sport is not the only object of human life, and should be carried on in moderation. The question is only as to the point where to leave off. I have already heard many voices of Englishmen complaining that sport plays much too great a part in English education, and in English life generally, and that England cannot expect to keep up with other nations in science, arts, manufactures, and commerce, if not merely most young persons, but their parents and sometimes even their own teachers, continue to consider "book-learning" (including laboratory work!) as subordinate to proficiency in one or more kinds of bodily exercise. Nobody denies that all work and no play make Jack a dull boy; but surely all play and no work makes him far duller, and even too moderate a dose of work with his play will not do for him in the long run. It is not for me to say how far those voices are in the right, and where the line should be drawn between mental and bodily education; that must be done by Englishmen for themselves, and they must abide by the consequences.

THE RESIN MARKET.—Messrs. F. and S. Chiesman and Co., of London and Liverpool, report that the resin market has ruled stronger in America during the past month than during May; "pales" have been selling rather better, and there has been a good demand for low grades. Stocks of common resin, however, are accumulating in Wilmington on account of the falling off in exports, though receipts did not show any appreciable increase on last year's figures. In the London market little business has been in progress of late. The arrivals of common resin are said to have been heavy, but stocks have well held, and prices have been little affected. The stock of all grades on public wharves at the end of May was 8,455 barrels, as against 12,544 barrels at the corresponding date last year. In Liverpool, the market has continued dull, with prices, however, fairly well maintained for all grades.

Reports of Companies.

PACIFIC BORAX AND REDWOOD'S CHEMICAL CO., LTD. AN INCREASING BUSINESS.

THE adjourned second ordinary general meeting of the Pacific Borax and Redwood's Chemical Works, Limited, was held last week at the offices, Dock House, Billiter-street, E.C., Sir Alexander Wilson (the chairman of the company) presiding.

The Chairman said: As this is an adjourned meeting of our company, by the desire of the directors on June 4, it is unnecessary to read the notice convening it. I propose that we take the directors' report, which is now in your hands, as read, and I hope you will consider the result which the accompanying statement of account discloses as the first year's working of the company as satisfactory. I think we may fairly congratulate ourselves, especially when we take into account that the business which this company was formed to carry on has been conducted under the disadvantageous conditions of the unprecedentedly low prices for most chemical products, including boracic acid and borates, which have ruled for the past year in all parts of the world. The company has done a largely-increasing business in Europe, its works being fully employed. Fresh manufactures are from time to time being added, so that the company may depend upon a larger variety of products for its success, and we may therefore look confidently to a continued development of our business both in sales and in our net profits. The world's consumption of one of our staple productions—borax—is making marvellous strides, and it is coming into more general use for a variety of industrial purposes, as, for instance, for the glaze on enamelled tablets and for the enamelled ironware now so rapidly taking the place of tinware. In the same way potters cannot do without borax for the glaze used in all varieties of china and earthenware. The consumption for this purpose alone is very large. For brazing it is indispensable. The silk hat of every-day use is stiffened with borax and other materials. Our laundries, almost without exception, use it for whitening and glazing linen. For leather-dressing, for glass making, dyers' use, in photography, and in soap powders—in fact it would take too long to enumerate to you the many uses to which borax and its allied products are applied. I should not, however, omit to refer to the immense value of borax and boracic acid in medicine and surgery as an antiseptic. The works of the company are well equipped, and have been kept up by renewals and repairs out of the revenue.

THE RESERVE FUND.

We have, besides this, set aside this year £4,000. for reserve depreciation account. This is quite apart from, and in addition to, the sum placed to general reserve. I would here refer to the competition which has for some time taken place in Europe in refined borax, which has brought the price of borax down to such a figure as has never before been known. We are well equipped to meet all competition, as, notwithstanding this depression in price of one of our productions, our business is of such a satisfactory nature as to enable us to fully carry out the statements as to profit made in our prospectus. Economy of working and other economies in the cost of production will be effected from new and improved machinery which has been erected or is in course of erection. We shall lose no opportunity of adding fresh manufactures to our list, to still further render us independent of any depression in the price of any of our products. You will see that we have earned enough during the year to cover our debenture interest and preference dividend combined more than three times over, and you are no doubt satisfied as to the value of your holdings of these, which rank high among the leading industrial securities. I do not know that there is anything else I can very well refer to. Most of you know as much about the business as I can tell you. I would therefore move: "That the directors' report and accounts be adopted, and that a dividend of 6 per cent. per annum be declared on the preference shares, and a dividend at the rate of 7 per cent. per annum on the ordinary shares, for the year ended March 31, 1897, and that the same (after deduction of the interim dividends paid in November, 1896) be paid on July 10, 1897."

Mr. E. J. Halsey: I have much pleasure in seconding this. I should like to say that a great deal, or nearly the whole, of the credit of the satisfactory results the company has shown is due to our two managing directors, Mr. Smith in America and my friend Mr. Baker on my right. I am sure, therefore, that we, as well as you, must be very thankful to them for the great labour and industry they have shown in the conduct of the company's affairs. (Applause.)

The Chairman then put the resolution to the meeting, when it was carried unanimously.

Mr. J. Gerstley: I have much pleasure in proposing "That Mr W. A. Kirby be reappointed auditor of the company for the ensuing year, and that the American accounts be audited by Messrs. Hart Brothers, Tibbetts, Heiron, and Co., as before, and that it be left to the directors to settle their remuneration."

Mr. G. H. Redwood seconded, and this was also agreed to.
Votes of thanks to the chairman and directors closed the proceedings.

THE LAUTARO NITRATE COMPANY, LTD. THE OUTLOOK AND THE COMBINE.

In addressing the shareholders of this Company at their ninth annual meeting Mr. H. A. Rau said:—

Last year and in the previous year I had occasion to speak to you about the combination. The combination is at present in the following situation. The errors to which I have repeatedly called attention in the basis on which the present combination has been formed have, unfortunately, borne the results that were natural. The excessive promoting of companies with excessive capital has necessitated productions, which, in the aggregate, have reached figures which have left consumption far behind. The effect on prices has not been slow to come, and has been further accentuated by the unprecedented fall in the price of sulphate of ammonia, which, as you know, is the great competitor we have in the market for nitrogenous manures. The production of the latter has been greatly increased, as some of you, perhaps, also know, yet I do not think that even the largest figures of that production and the lowest figures of cost that are mentioned need unreasonably frighten us—I mean the nitrate industry in general—if only an understanding between producers such as has been made successfully from other articles can be arrived at. It is not impossible to arrive at it; but there are difficulties, and I am treading on delicate ground in speaking of the latter. I am very anxious to hurt nobody's feelings if I can help it, but I consider I owe you information and a FRANK STATEMENT.

The situation into which this industry has been allowed to fall for want of taking in time such measures as are absolutely necessary is undoubtedly serious. The failure of the combination to improve prices, which we foresaw from the beginning, and to which I drew attention last year—has made further progress, and we have touched the lowest prices on record, although for over a year these have been in existence a combination which had for its object to raise prices and adjust production to consumption. Stocks are not excessive by any means, if compared with those generally considered as normal; and, what is more, consumption, as a whole, has not decreased. Yet prices are so low that it may not be possible for a large section of the industry to make any profits at all; so that the sacrifices that have been made by cheap producers have been unavailing to get them better prices, and have not given the dear producers that which was the *raison d'être* of the combination—namely, to allow them to make some profits also. The inevitable consequence has been the demand for further reduction in exports. This is not, I believe, an effective remedy, as I am afraid it will chiefly benefit not the makers, but the speculative element in the trade. Your directors have given full expression to their opinion with regard to what ought to be done, and in reply to the demand for further reduction, they have submitted a plan for grouping together the interests of all the industry, and for developing the consumption, as they are convinced this is the only remedy, and one that will allow us to live profitably in face of the competition with which we have to contend. For that purpose a practical scheme, worked out in conjunction with other competent persons, has been formed in order to avoid the constant underselling by producers without object. Unfortunately, we are told in several quarters that these means of salvation cannot be adopted, while at the same time no palpable reasons are given. I am afraid that this may mean difficulties raised by what I should call outside interests, and I hope that we may conciliate or overcome them, as we have the desire to respect everybody's position while being allowed ourselves to make reasonable profits. The great drawback of the present situation is one to which I have for a long time been calling attention—that with the present fierce competition the necessary relations have been destroyed between the retail and wholesale trade in the article. Consequently, the persons who should be most interested to recommend nitrate of soda in districts where it is known already or as yet unknown, cannot possibly make a living out of it unless they run the risk of speculation. This is so because the large speculators themselves fight each other in all markets, and sell to the smallest buyer at the wholesale price. There is no doubt, however, that there is still an immense field for nitrate even should the production of sulphate of ammonia be largely increased. What we want is to reach these fields, and it depends on the united action of the nitrate producers to do so, and to do so profitably. That there are still immense openings for nitrate is conclusively demonstrated by the most eminent authorities in the principal agricultural districts on the Continent as well as in England. I know of one statement, published by one of the first agronomists of Europe, which is to the effect that

SEVERAL MILLION TONS COULD BE EMPLOYED

to great advantage in Central Europe alone if nitrate were used even on the scale on which it is used in Belgium, where the scale of consumption is still far below the theoretical requirements for producing the maximum of crops economically. At present the world's con-

sumption is only slightly over 1,000,000 tons, so you can see the margin there would be if the sales were properly organised. The position is really not so bad as some believe it to be, if only the people most interested in nitrate will do that which is necessary. We have been working with the combination and doing what we could. We have tried to withstand demands which we thought were not conducive to the interests of our shareholders or to the industry in general, and we are continuing to do so. We hope we shall arrive at some result; in fact, there are indications now that we may do so. At present, however, no definite result can be announced. The Chairman then moved the adoption of the report and accounts, embodying a dividend of 10 per cent., which were passed. A director stated that he agreed most emphatically with the reasons given by Mr. Rau for the disappointing state of the nitrate trade—viz., the unsatisfactory position of the dealers and distributors of nitrate, who have under existing conditions no object in pushing the sale of the article, because they can make no profit out of it. He also cordially agreed with the remedy proposed by Mr. Rau as the only practicable one to centralise the sale of nitrate, and to use every effort to increase the present rate of consumption by protecting and encouraging the dealers. Further, he gave it as his opinion as a merchant of many years standing in the trade that with proper organisation the producers could sell as much nitrate at £9. a ton as can be sold to-day at £7. 5s. to £7. 10s.

ELECTRICAL POWER STORAGE CO., LTD.

The directors in their report to May 31 last state that the net profit for the year is £4,141., which, with a balance of £343. from last year, amounts to £4,485., out of which the directors recommend the payment of a dividend of 5 per cent. on the ordinary share capital, which will absorb £4,243., leaving £242. to be carried forward. Provision has been made for the maintenance of buildings, plant, tools, &c., at a cost of £2,048. The arrangements for the manufacture of the new Faure-King cell are being rapidly pressed forward, and large orders are being obtained for this new class of goods. The company will shortly be in a position to manufacture and supply storage batteries to any specification embodying known types. The increased demand for the storage batteries of the company's manufacture has necessitated additional accommodation, and premises adjacent to the company's Millwall works, having an area of about 16,000 square feet, have accordingly been acquired on favourable terms. For the purpose of providing the necessary capital, which the increase of the company's business and the equipment of the new premises renders necessary, an issue of debentures to the amount of £30,000., bearing interest at the rate of 5 per cent., has been authorised.

WEST RIDING RIVERS BOARD.

FOUR ACTIONS AGAINST MANUFACTURERS.

AT the May meeting of the West Riding of Yorkshire Rivers Board it was decided to enter upon a new phase of their work by calling before them certain manufacturers who had neglected, or shown indisposition to comply with the Board's request, to purify the liquid refuse discharged from their works into the public streams. In exercising their powers, the Board have from the beginning avoided compulsion, except as a last resort, and it is to the credit of the authorities and manufacturers as a whole that so much has been accomplished towards improving the rivers of the Riding by conciliatory means. After the meeting referred to, notices were served upon a number of manufacturers, calling upon them to appear before the Board at a special meeting to show cause why they should not be prosecuted for offending against the Rivers Act. The special meeting was held in the Civil Court at the Leeds Town Hall on Friday, last week, and, in the absence of Mr. Milnes Gaskell, the vice-chairman (Sir Charles Skelton) presided. Before proceeding with the business, Col. Harding expressed the congratulations of the board upon the honour conferred upon Sir Charles by the Queen, and the same was warmly acknowledged by him. Interviews then took place with some twelve manufacturers engaged in one or other of the following trades:—1, Coalwashing; 2, tanning; 3, brewing; 4, paperworks; 5, woollen manufacture. In the majority of instances the offence was admitted, and, after a friendly discussion, assurances were given to construct or complete necessary works and apparatus within periods ranging from one to three months for rendering the effluents more fit for the rivers and streams. In the four following instances, where no assurance was forthcoming, or was not of a character acceptable to the board, it was decided to apply to the Local Government Board for sanction to take legal proceedings, viz.:—1, Mr. Harold Nickols, tanner, Meanwood Tannery, Leeds; 2, Messrs. James Lees & Sons, tanners, Hipperholme Tannery, Hipperholme; 3, Messrs. Brear & Brown, Limited, brewers, Hipperholme Steam Brewery, Hipperholme; 4, Messrs. D. & H. Mallalieu, Limited, wool trade, Bailey Mills, Saddleworth. It would seem that there are many manufacturers equally remiss in treating their trade refuse, and unless they proceed to carry out the board's requirements without further delay, we are informed that they will be also cited before the board and dealt with as those above named.

Correspondence.

* We do not hold ourselves responsible for the opinions expressed by our correspondents.

PREVENTING TAR STILL EXPLOSIONS.

(To the Editor of the Chemical Trade Journal.)

SIR,—I have noticed the report of the deplorable accident at Mr. Lockwood's works at Bradford through the explosion of a still, and venture to write drawing attention to a device we have adopted in our various apparatus of this nature during the past 20 years, which prevents any explosion such as this happening.

We insert in the still a $1\frac{1}{2}$ in. to 2 in. wrought-iron pipe, preferably the latter size, reaching down to within a foot of the bottom, the upper portion of the pipe projecting out of the top of the still three or four feet. This pipe acts as a safety valve, as when the worm gets made up from any cause whatever, the pressure begins to blow out at this pipe.

It is recommended that an iron rod be put down the pipe every time the still is charged so as to insure its being open, though we have never yet found the pipe made up, as the heat of the still prevents any of contents solidifying in it.

Yours, etc.,
J. E. RILEY.

Accrington, July 6th, 1897.

Trade Notes.

COLLAPSE OF A RUNCORN CHEMICAL WORKS.—A considerable portion of the chemical works of Messrs. W. R. Earp, Halton-road, Runcorn, recently fell with a crash. The premises, which were extended some six months ago, consist of five bays, and are used for the manufacture and storage of borax. In the two bays, which are now in ruins, twelve 14-in. girders measuring 23 ft. and weighing a ton each were introduced, and it is supposed that the pillars upon which these were placed gave way, thus causing the collapse. The works were in full operation at the time, and several men received slight injuries. The foreman, James Sandbach, saw the walls giving way, and jumped into an empty pan, whereby he was considerably protected.

MILK ADULTERATION—THE COW'S FAULT.—Wm. Henry Corker, a farmer, of Allostock, near Knutsford, appeared on Tuesday before Mr. J. M. Vates, Q.C., and other justices, at the Manchester County Police-court, at the instance of Police Inspector Jones, charged with adulterating milk consigned to a Manchester purveyor on Sunday, May 13th. Samples of the milk taken at the railway station were found to have a deficiency of the usual proportion of fat; but a couple of analysts whom defendant had employed to take samples directly after the cows had been milked, stated that they found the same deficiency, and they attributed it to the abundance of feed, which increased the quantity but decreased the quality of milk. The Bench dismissed the case. Defendant applied for costs, but the magistrates did not grant the application.

USE OF WHITE INDIGO IN DYEING.—In the course of a recent paper on a new series of indigo vats, read by Dr. Grossman before the Society of Dyers and Colourists, the author points out that whatever reducing agent is used, it always introduces certain substances which accumulate in the vat in a soluble or insoluble form, or both. The amount of insoluble matter is in some vats very considerable from the start, in others it becomes considerable after a short time of working. In the course of time every vat yields worse results on account of these soluble and insoluble accumulations, and finally becomes unfit for dyeing purposes. In the case of the copperas vat, which for every 10 lb. of indigotine used, contains about 50 lb. of sediment, the author suggests setting the vat with white indigo. As this requires no reducing agent to start with, the only quantity of reducing agent required to keep this vat in condition will be the quantity equivalent to the indigotine which has become regenerated by the action of the air caused by the working of the goods in the vat, and which is assumed to be 5 per cent. That is to say, a copperas and lime vat can be worked with $\frac{1}{10}$ of the amount of sediment, and the vat, being fed with white indigo, should work twenty times as long as it does at present. The same applies to the woad and the hydrosulphite vat. Both these vats, when set and fed with white indigo, can be worked with $\frac{1}{10}$ of the reducing agent. But there are other important advantages which apply to these vats when they are worked on this principle. The hydrosulphite vat, as well as the woad vat, always contains an excess of reducing agent in solution, and wherever such is the case a danger arises of loss of indigo by over reduction; this danger is reduced to a minimum in working with indigo white, and the colours obtained are superior to those yielded by the corresponding vats worked with ordinary indigo.

NITRATE STATISTICS.—The Permanent Nitrate Committee, in its statistical circular, states that the total exports of nitrate to Europe in June were 1,111,500 qtls., and there were loading for Europe July 1st, 1,447,000 qtls.; imports, Europe, June, were 46,850 tons, and deliveries, Europe, 66,850 tons; the total deliveries, Europe, for six months ended June 30th, were 708,070 tons; the visible supply, Europe, July 1st, stocks and afloat, was 293,860 tons.

THE SALT UNION SOAP WORKS.—The Salt Union have completed their preparations for the reception of the plant necessary for undertaking soap manufacture at Winsford. The old Dutch salt works are being converted into a manufactory, which, it is believed, will find employment for a great deal of surplus labour resulting from depression in the salt trade. The works cover floor space of 2,500 square yards, and will be fitted for the manufacture of household and toilet soap, into which the Salt Union intend, it is stated, to seriously launch.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols are firm and prices have improved, 90's now being quoted 2s. 3d. to 2s. 4d., and 50/90's 2s. 2d. to 2s. 3d. Carbolic acids are slightly easier, with 60% crude at 1s. 11d. Crystals and liquid remain the same. Naphthas show no alteration in price, but solvent has been moving more freely. Pitch continues dull at 18s. to 21s. 6d. f.o.b. East coast. Anthracene is very slow of sale. Tar oils and cresotes, however, continue to move fairly well, and prices are promising.

Sulphate of ammonia is steady. The output being small just now, prices are well maintained. There is not great anxiety on either side to sell, attention being chiefly directed to the forward position. Current prompt values are: Beckton £7. 11s. 3d., London outside makes £7. 10s., Liverpool £7. 12s. 6d., and Hull and Leith the turn firmer at £7. 10s. Nitrate of soda dull at 7s. $4\frac{1}{4}$ d. to 7s. $7\frac{1}{2}$ d. per cwt.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade business has been more brisk in the past week owing to the somewhat heavy demand for shipment to the States. Bleaching powder is especially active, but without change in prices, which remains at £6. 7s. 6d. to £6. 10s. f.o.r., and £6. 12s. 6d. to £6. 15s. hardwoods, f.o.b. Alkali, 58%, is maintained at the conventional price of £3. 17s. 6d., bags, f.o.r. There is no material change in the price of this article for export. In caustic soda there are no quotable changes, but works are fairly busy, and prices are as follows:—f.o.b., Liverpool, 77%, £9; 74%, £8; 70%, £7 2s. 6d.; 60%, £6 2s. 6d. nett, 10-ton lots. Chlorate of potash, 4d. per lb. Soda, $4\frac{1}{4}$ d. per lb. Bicarbonate and soda crystals are in steady request without change in values. Sulphur, £4. 12s. 6d., f.o.r. Sulphate of copper quieter, at £16, f.o.b. Prices of potash, caustic and carbonate, are well maintained, and there is a continued good inquiry. Brown acetate of lime slightly easier, at £4. 17s. 6d., c.i.f.; grey, £8. per ton. Foreign white acetate of lead lower at £22 10s., c.i.f. Acetate of soda dull, at £12. 15s. to £13., c.i.f. For arsenic there is still only a small demand, but price is steady, at £22. to £22. 10s., f.o.r., according to brand. Borax lower, at £14. 10s. to £15. Nitrate of soda quiet, and for prompt delivery price is easier, at 7s. $4\frac{1}{4}$ d. per cwt. Grey muriate of ammonia, £18. per ton. Other ammonia salts unchanged. Sulphocyanides neglected. Prussiate of potash slightly easier, at $5\frac{1}{4}$ d. per lb. Cyanide, 98/100%, lower, at 9s. $3\frac{1}{4}$ d. per lb. For carbolic acid there is only moderate inquiry, and prices are rather lower if anything. Chemicals for the textile trades are in slack demand, and in the chemical trade generally lower quotations prevail.

REPORT ON MANURE MATERIAL.

There has been a quiet market throughout the week, but the position of nitrogenous material is somewhat firmer. Phosphates, however, are not much inquired for, and there is no improvement. The quotation for 75/80% Florida phosphate rock remains at $5\frac{1}{4}$ d. per unit, in cargoes, c.i.f. to United Kingdom, and the quantity of rock above ground in Florida being much reduced by shipments during the last six or nine months, raisers seem disposed to be firm in regard to further sales. There would still be sellers of South Carolina River rock at $4\frac{3}{4}$ d. per unit, c.i.f. to good United Kingdom ports. For Peace River and for Algerian 58/63%, the quotation is 5d. per unit, but a fraction less would no doubt have to be accepted in order to induce business in quantity. Cargoes of River Plate bones for autumn shipment are worth about £3. 12s. 6d. per ton. Bombay bone meal is quoted £3. 11s. 3d. ex store, and for shipment probably 1s. 3d. per ton less would be accepted if bid. There is nothing doing in crushed Kurachee bones. Nitrate of soda is somewhat firmer in all positions. On spot the quotation for ordinary quality is again 7s. 6d., and for fine 7s. $7\frac{1}{4}$ d. per cwt.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, steady. Scotch warrants closed at 44s. 1½d.; Middlesbro', 39s. 4d. cash; and hematite, 47s. 0d. Copper steady: Chili bars, G.O.B.'s and G.M.B.'s, closed at £47. 12s. 6d. to £47. 17s. 6d. cash, and £47. 18s. 9d. to £48. 3s. 9d. three months. Tin from Straits closed at £62. 8s. 9d. to £62. 18s. 9d. cash, and £62. 18s. 9d. to £63. 8s. 9d. three months; Australian, £64. 0s.; English ingots, £66. 0s. Lead firm: Spanish, £12. 5s. to £12. 6s. 3d.; English, £12. 7s. 6d. to £12. 10s. Silesian spelter, ordinary, £17. 5s. Nickel, 1s. 2½d. Antimony, £29. 15s. Quicksilver: First hands, £7. 5s.; second hands, £7. 3s. 6d. Copper shares steady: Cape, 2½ to 2¾; Copiapo, 2½ to 2¾; Libiola, 2½ to 2¾; Mason and Barry, 2¾ to 3; Rio Tinto, 2¼ to 2½; Tharsis, 5½ to 6½.

GLASGOW, WEDNESDAY.—Market irregular, with a moderate business. Scotch done at 44s., 43s. 11½d., 44s. 2½d., and 4s. 1½d. cash; also at 44s. 2d., and 44s. 4d. one month; buyers, 45s. 1½d. cash; sellers, 44s. 2d. Cleveland done at 39s. 2d. cash, and 39s. 5d. one month; buyers, 39s. 4d. cash; sellers, 39s. 5d. Cumberland hematite done at 47s. 1½d. to 47s. 3d. one month; buyers, 47s. cash. Middlesbrough hematite done at 48s. 9d. one month; buyers, 48s. 5½d. cash; sellers, 1d. more.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is steady but rather quiet, there being very little business to report. Olive is firm in price, and, considering the steady tone of the market, the demand is satisfactory. Linseed is the turn lower, at 15s. 3d. to 16s. for Liverpool makes in export casks, but closes firm at the reduction. Cottonseed is steady, holders remaining firm at 15s. to 15s. 9d. for Liverpool refined. Castor oil is dearer, and firm at the rise, there being a fair demand for spot parcels. Good seconds Calcutta are offering in small quantities only, at 3½d. First pressure French has been selling at 3d. to 3½d., with sellers now holding out for 3¼d. per lb., the same price being wanted for Madras. There is not much doing in tallow, but the market is fairly steady. South American has been done on spot at 19s. 9d. per cwt. ex quay. Resin is decidedly quiet, but prices so far show no prospect of wavering. Spirits of turpentine have fallen to 21s. per cwt., and are only moving quietly at that. Petroleum is unchanged in price or position.

CAKES.—The prices of West American and Liverpool linseed are unchanged. There have been moderate sales of the former, but the latter have been slow of sale. Decorticated American cottonseed are quiet, at £5. 5s. to £5. 15s. Steady quietude has characterised Liverpool decorticated and undecorticated, prices remaining as last quoted. The demand for Egyptian is quiet, prices again favouring buyers at £3. 8s. 9d. per ton.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire, common, £10., medium, £12., best, £15, Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—Both linseed and cotton oils close a firm market; also lard and foreign butters find a good demand. The stocks of seed in Hull, month ending June 30th, were—Linseed, 24,012 qrs. against 30,175 qrs. the 31st May; rapeseed, 990 qrs. against 990 qrs.; cottonseed, 2,219 tons against 1,549 tons. The imports of seed into Hull during the month as against the previous month have been 47,774 qrs. against 83,795 qrs.—Rapeseed, 6,339 qrs. against 8,334 qrs.; cotton seed, 17,763 tons against 12,650 tons. Linseed oil closes firm spot 13s. 9d. per cwt., naked; forward July-August 13s. 9d., last four months, 13s. 7½d. Boiled and refined, £1. to £1. 5s. per ton extra. Refined cotton oil firm, spot, naked, 13s. 3d.; forward July-August 13s. 6d. asked, and 13s. 6½d. buyers for November-April. Filtered refined, £1. to £1. 5s. per ton extra. Crude, 12s. 1½d. naked. Casks £1., and ordinary barrels £1. 10s. per ton extra. Turpentine, 21s. Oleines £15. 15s. to £19. per ton for white, 95/97%, saponifiable. Olive oils are unchanged. Olive oil soaps from £15s. 5s. per ton ex-quay Hull to arrive. Cod oils, £16 to £18 per ton. Castor oil unchanged. Lard, demand good: American pails, 24s.; firkins, 23s.; bladders, 28s. to 31s. per cwt. Butter experiences a fair demand: Danish, 96s.; Dutch 90s. to 93s.

CAKES.—Linseed cakes unchanged, 95% £6. 2s. 6d. to £6. 5s. Oilcakes, £5. 2s. 6d. to £5. 5s. Russians, £6. 7s. 6d. Americans,

£5. 7s. 6d. to £5. 10s. Cotton cakes steady: best makes, £3. 10s. to £3. 11s. 3d.; seconds, £3. 7s. 6d. to £3. 8s. 9d. per ton. Rape cakes unchanged.

PAINTS.—Makers continue well employed without any startling developments. White and red leads unchanged. Mineral dry colours from £3. to £8. per ton. Ready mixed paints continue a useful branch to the industry, but much cut up, from £23. per ton in tins. Imperial black varnish £5. per ton, in barrels free.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Report bearing upon the chemical market have had very little of novelty about them during the past week, most of the lines being little altered one way or the other. There is a steady movement, but by no means a strong one. Baltic shipping business, and also to the home coast markets, seems to have noted another further improvement, but it is very slight of bulk, and this section still falls considerably short of a good average season. Bichromate of potash and bichromate of soda still hold steadily to the combination prices, on only a moderate output however. Sulphate of copper is slightly easier at not over £16. 5s. There is no quotable change in the position of sulphate of ammonia, as to prompt business, though probably it is a shade weaker. Forward dealing has not made the progress expected, and makers and buyers are still merely chaffering as to what ought to be considered a reasonable forward value—without arriving at an agreement. Mineral oils and paraffins unchanged.

Chief prices current are:—Soda crystals, £2. 12s. 6d., nett, Tyne, soda ash, 48/62, £4. 2s. 6d. to £4. 15s. nett, Tyne; white alkali, 48/52, £5. to £5. 10s. nett, Tyne; alum in lump, £5. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 2s. 6d., 70/72° £7. 2s. 6d., 60/62° £6. 2s. 6d., and cream 60/62° £6., all nett, Liverpool; bleaching powder, 35/37°, £6. 10s. nett, Tyne; saltcake, 19s. to 20s.; borax, English, refined, £16. and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4d. less 5%, any port; nitrate of soda, 7s. 6d. to 7s. 9d.; sulphate of ammonia, £7. 8s. 9d. to £7. 10s., prompt, f.o.b. Leith; salammioniac, first and second white, £33. and £31. nett any port; sulphate of copper £16. 5s., less 5% Liverpool; paraffin scale, hard, 1¼d. to 1½d., and soft, 1½d. per lb.; paraffin wax, 120° semi-refined, 1¼d. to 2d. per lb.; paraffin spirit (naphtha), 6d. to 6½d. per gallon; paraffin oil (burning) No. 1, 6¼d., and crystal, 6½d., at Glasgow and other big centres, for Scotch buyers (English sales ½d. to ¾d. lower); ditto (lubricating) 865° £5. to £5. 5s., 885° £5. 15s. to £6. 5s., and 890/895° £6. 10s. to £7. Week's imports of sugar at Greenock were 10,940 bags beet unrefined.

TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals are fairly steady, and prices are unchanged. Caustic, 76/77%, continues scarce and in demand at £8. 15s. to £9.; 70%, £7. 7s. 6d. to £7. 10s. per ton. Soda crystals £2. 12s. 6d. per ton, gross weight, locally. Sulphur, £4. 15s. per ton.

Bleaching powder, softs, £6. 10s. per ton, nett; hard, £6. 15s. per ton, nett; caustic soda, 76/77%, £9. per ton, nett; do., 70%, £7. 10s. per ton, nett; recovered sulphur, 2 cwt. bags, £4. 15s. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. 6d. per ton, nett; do., 52%, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett. Hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett weight; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett weight; blanc fixe, £7. 5s. per ton, nett weight; chloride of barium, refined crystals, £6. 15s. per ton, nett weight; do., 90/95% crude calcined, £6. per ton nett weight; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham salt is steady at 9s. per ton, f.o.b. Tees.

COALS.—Trade generally is very steady, and most collieries are working full time. Coke in strong demand at full prices. Best Northumbrian steam, 8s. 7½d. to 9s. per ton; second quality, 7s. 9d. to 8s. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; gas coals, 7s. 3d. to 7s. 6d. per ton; bunker coals, 7s. 6d. to 8s.; coke, very fine, 18s. 6d. to 20s.

New Companies.

Safety Motor Syndicate, Limited.—CAPITAL £1,500 in shares of £1. each. This company has been formed to manufacture and sell motors, steam, oil, gas and air engines, etc., dynamos and other similar appliances.

Thomas Mills, Limited.—CAPITAL £15,000. in shares of £10. each. This company has been formed to deal in tallow, oil cakes, wool and feeding stuffs generally. The subscribers to the memorandum of association are:—Rev. C. A. Berry, D.D., 13, Parkdale, Wolverhampton; Mrs. M. A. Berry, 13, Parkdale, Wolverhampton; E. C. Humphreys, 88, Tottenhall-road, Wolverhampton, superintendent; Mrs. E. Mills, Whitmore Hall, Wolverhampton; T. T. Mills, Whitmore Hall, Wolverhampton, traveller; A. Mills, Whitmore Hall, Wolverhampton, assistant; H. E. Tolefree, 22, Clark-street, Wolverhampton, traveller.

National Oil Company, Limited.—CAPITAL £10,000. in shares

of £10 each. This company has been formed to manufacture and prepare, oleo and other oils, stearine, tallow, bones, horns, hoofs, hides, fertilizers, etc. The subscribers to the memorandum of association are:—A. Clark, 64, West Smithfield, E.C., accountant; L. J. Woodruff, 64, West Smithfield, E.C., secretary; J. M. Johnstone, 42, Half Moon-street, W., solicitor; A. Cohn, 64, West Smithfield, E.C., meat salesman; G. A. F. Bertie, 215, Essex-road, Canonbury, clerk; A. Robinson, 8, Kimberley-road, Stockwell, clerk; S. Hackett, 13, Belitha Villas, Barnsbury, clerk.

Ozark Lead and Zinc Syndicate, Limited.—CAPITAL £20,000. in shares of £1. each. This company has been formed to acquire and develop mining and other properties. The subscribers to the memorandum of association are:—J. A. Weston, Broad-street House, E.C., merchant; W. Elworthy, 16, Rosebery Gardens, Crouch End, engineer; R. H. Renwick, 165, Rathcoole Gardens, Hornsey; W. Abbott, 4, Dod-street, Limehouse, manufacturer; W. G. Abbott, 4, Dod-street, Limehouse, manufacturer; W. Lewis, Broad street House, E.C., merchant; J. C. Mitchell, 51, Russell-road, N., accountant.

IMPORTS OF CHEMICAL PRODUCTS

AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM

LONDON.

Week ending June 26th.

Acetanilide—Holland, 20 kgs. J. Barber & Co.

Acetic Acid—Holland, 157 pks. A. & M. Zimmermann

178 Little & Johnston

Acetone—Holland, 1 ck. G. Rahn & Co.

Austria, 15 pks. Thames S. T. & L. Co.

Alkali—Canada, 127 c. J. Barber & Co.

Alum—Holland, 150 cks. Ohlen-schlager Brs.

Antimony Ore—E. Indies, 55 t. H. Grey, jun.

France, 1 H. Johnson & S. ns

Asbestos—Italy, £170 Bender & Martiny

London Asbestos Co.

Barium Chloride—Germany, 22 cks. Petri Brs.

Barytes—Belgium, 33 brls. O'Hara & Hoar

Holland, 23 cks. W. Harrison & Co.

Belgium, 200 bgs. J. L. Lyon & Co.

Germany, 27 W. Harrison & Co.

Caoutchouc—France, 28 c. Bennett Brs. & Sons

Singapore, 53 S. Figgis & Co.

W.C. Africa, 1 T. H. Lee

France, 5 H. Johnson & Sons

Belgium, 160 Prop. Bull. Wf.

R.P. Col., 45 Stiebel Brs.

Germany, 22 Wallace Brs.

Zanzibar, 60 S. Figgis & Co.

Aden, 10 Wallace Brs.

Zanzibar, 10 Hale & Son

Germany, 64 H. Johnson & Sons

Carbolic Acid—Holland, 95 pks. J. G. Back

100 Blagden, Waugh & Co.

Carbonic Acid—Belgium, 20 pks. John Cockerill Line

Castor Oil—France, 17 cks. J. Greig

Ceylon, 100 cs. R. G. Hall & Co.

Italy, 5 L. & I. D. Jt. Co.

France, 14 brls. Mordaunt Brs.

Caustic Potash—Belgium, 11 drs. Sawyer, Sons & Co.

11 A. J. Luke & Co.

Chemicals (otherwise undescribed)

Germany, £48 H. Lambert

45 L. & I. D. Jt. Co.

192 G. Rahn & Co.

210 T. H. Lee

507 A. & M. Zimmermann

Holland, 112 B. & F. Wf. Co.

77 H. Lorenz

445 T. H. Lee

12 F. Boehm

France, 128 Mory & Co.

Belgium, 130 John Cockerill Line

10 Sawer, Sons & Co.

Germany, 13 Charles & Fox

131 D. W. Greenhough & Son

U. States, 100 O. Thum

Chromic Acid—Holland, 1 pk. J. Owen

Citrate of Lime—Italy, 89 cks. Thames S. T. & L. Co.

Cream of Tartar—France, 7 pks. B. & F. Wf. Co.

Spain, 10 cks. 7 W.C. Bacon & Co.

Portugal, 5 B. & F. Wf. Co.

Italy, 30 Howard & Sons

France, 5 C. Christophersen & Co.

5 F. C. Devon & Co.

Cresoline—U. States, 51 cs. Lunham & Moore

Cryolite—Denmark, £38 H. Johnson & Sons

Dextrine—Germany, 90 bgs. M. D. Co.

43 pks. Pronk, Davis & Co.

Dyestuffs—Annatto France, 4 cs. W. Fenn

Argols Italy, 15 cks. Thames S. T. & L. Co.

977 bgs. B. Jacob & Sons

Cochineal—Canaries, 24 bgs. Sperling & Williams

57 G. S. Bruce

Cutch—E. Indies, 10 pks. L. & I. D. Jt. Co.

Singapore, 700 bks. J. Swire & Sons

Ceylon, 10 cs. L. & N. W. Rly.

Singapore, 200 E. Davis & Co.

Divi Divi—Germany, 58 pks. Uthoff & Co.

E. Indies, 6 bgs. Arbuthnot, Latham & Co.

B.W.I., 183 hf. bgs. Union Ltge. Co.

Extracts—France, 115 pks. Bennett S. S. Co.

Gambler—Singapore, 433 pks. G. R. Haller

449 Butler's Wf. Ltd.

444 J. Greig

238 L. & I. D. Jt. Co.

455 bbs. E. Boustead & Co.

225 bgs. S. Barrow & Bro.

496 Prop. Hay & Wf.

Indigo—E. Indies, 93 chts. L. & I. D. Jt. Co.

68 Begg, Dunlop & Co.

C. America, 3 bns. L. & I. D. Jt. Co.

Germany, 4 cs. T. H. Lee

E. Indies, 7 chts. Binny & Co.

Myrabolams—E. Indies, 1,309 bgs. H. K. Daniels

Shumac—Italy, 100 pks. H. Johnson & Sons

570 bgs. Ross & Deering

200 L. & N. W. Rly.

Tanners' Bark—Natal, 44 t. Flack, Chandler & Co.

Turneric—E. Indies, 160 bgs. Williams, Torrey & Co.

Farina—Holland, 50 pks. J. Barber & Co.

24 R. Bennett & Co.

50 bgs. J. Knill & Co.

Germany, 100 Hernu, Peron & Co.

Belgium, 5 T. H. Lee

Glucose—Germany, 47 pks. 393 c. Bennett S. S. Co.

U. States, 1,350 1,584 Robinson, Son & Co.

1,500 1,500 Thames S. T. & L. Co.

1,300 2,300 E. Thompson & Co.

110 480 L. Norman & Co.

50 300 Vokins & Co.

2,000 2,000 L. & I. D. Jt. Co.

1,000 1,000 Beresford & Co.

50 500 Page, Son & East

150 850 Sundry & Sons

200 1,200 T. J. Lipton

50 280 Mid. Railway Co.

300 500 Bellamy's Wf. Co.

750 750 Ohlenschlager Brs.

600 600 L. & N. W. Railway

50 280 J. Keiller & Son

150 550 H. Johnson & Sons

7,510 1,550 Fellows, Morton & Co.

50 180 W. H. Sampson

30 112 C. Southwell & Co.

3,175 4,910 R. G. Hall & Co.

Glue—Holland, £141 G. Rahn & Co.

U. States, 76 B. Galloway

Germany, 30 L. & I. D. Jt. Co.

Belgium, 184 J. Barber & Co.

France, 12 Bennett S. S. Co.

Germany, 140 J. Barber & Co.

U. States, 60 Taylor Brs.

Holland, 30 Armour & Co.

Germany, 133 Carey & Sons

France, 30 B. & F. Wf. Co.

Infusorial Earth—Germany, 30 t. A. Haacke & Co.

Lead Acetate—Germany, 10 cks. R. W. Greeff & Co.

51 F. Boehm

Manure—E. Indies, 100 t. Cornwell, Son, & Co.

Germany, 11 T. H. Lee

Belgium, 240 Anglo-Conti. Guano Works

E. Indies, 200 Fox, Roy, & Co.

Belgium, 2 Liebig's Extract Meat Co.

Methyl Alcohol—Germany, 4 dms. Lister & Biggs

Mica—Germany, £15 H. & G. Dufield

Molasses—B.W.I., 100 cks. 1,000 c. L. & I. D. Jt. Co.

Egypt, — 42,800 J. R. Francis & Co.

Nitre—Tatral, 16,901 bgs. W. Montgomery & Co.

Ochre—France, 218 cks. W. Harrison & Co.

200 K. Stenert

30 Z. Cartwright, Ltd.

Holland, 4 25 pks. Phillips & Graves

France, 44 W. E. Cole

Spain, 40 sks. H. Johnson & Sons

Pitch—B.W.I., 13 bgs. Gillespie Brs. & Co.

Plumbago—Ceylon, 595 cks. J. Thredder, Son, & Co.

252 Williams, Torrey, & Co.

Germany, 17 P. Hecker & Co.

30 B. Galloway

43 J. Thredder, Son, & Co.

6 T. H. Lee

10 H. Johnson & Sons

13 H. Lambert

Italy, 128 J. Thredder, Son, & Co.

Ceylon, 164 Marshall & French

Potash—Germany, 140 c. Petri Brs.

Canada, £210 J. G. Back

49 c. S. Ward & Co.

Potassium Permanganate—Holland, 20 cks. Phillips & Graves

Quicksilver—Spain, 5,000 flks. N. M. Rothschild & Son

20 bds. H. J. Enthoven & Son

Rosin—Germany, 3 brls. L. & I. D. Jt. Co.

U. States, 5,447 T. Nickels & Co.

Rosin Oil—Germany, 2 brls. H. Hunt

Saltpetre—Germany, 70 bgs. S. E. Railway Co.

12 cks. L. & I. D. Jt. Co.

E. Indies, 304 bgs. Kalli Brs.

Soda—Belgium, 5,000 c. R. Waters

1,000 J. W. Barker

1,000 E. & T. Plenk

Holland, 270 R. W. Greeff & Co.

Belgium, 13 J. Harrison

Germany, 2,000 R. Waters

Sodium Acetate—France, 54 cks. J. Harrison

Belgium, 23 H. Lorenz

Sodium Prussiate—Belgium, 41 cks. Blagden, Waugh, & Co.

Starch—Belgium, 140 cs. Becker & Wagner

Austria, 14 bgs. G. Thompson

Belgium,	70 cs.	Sawer, Sons, & Co
"	80	Leach & Co
"	200	Taylor Bros
"	398	F. Claydon & Co
Holland,	10	Hernu, Peron, & Co
"	85	Phillips & Graves
U. States,	200 bgs.	Ohlenschlager Bros
"	200	R. G. Hall & Co.

Stearine—		
Belgium,	3 cks.	T. H. Lee
U. States,	64	Wilsons & Furness Co
Holland,	50 bls.	J. Owen
"	69 cks.	Palmer & Co.
France,	80 bgs.	H. Hill & Sons
Germany,	90 cks.	A. Fiey & Co.
"	77 cs.	T. Palmer

Sulphur—		
Italy,	200 t.	Brandram Bros. & Co.
"	5	J. Houghton & Sons
"	10	J. Kitchen
"	20	G. Boor & Co.
"	10	Soundy & Sons
"	150	Ekman Pulp & Paper Co.
"	15	Johnson & Hooper
"	20	F. C. Devon & Co.
"	37	Fuerst Bros.

Sulphur Chloride—		
Holland,	20 pks.	Typke & King

Tartaric Acid—		
Holland,	36 pks.	Kirkpatrick & Co.
Germany,	7	B. & F. Wf. Co.
France,	12	F. C. Devon & Co.
Holland,	12	B. & F. Wf. Co.

Ultramarine—		
Holland,	10 cs.	Hernu, Peron, & Co
"	3	Phillips & Graves
Belgium,	10	W. Harrison & Co.
Holland,	8 cks.	"

Yarnish—		
U. States,	6 pks.	Dawson Bros.
Holland,	1	Randall Bros.

White Lead—		
Belgium,	2 brls.	J. L. Lyon & Co.
"	18 cks.	Perkins & Homer
France,	36	Soundy & Sons
"	30	W. E. Cole
Holland,	29	Burrell & Co.
Germany,	34	D. Storer & Sons
Belgium,	5	Becker & Wagner
"	43 cks.	T. & W. Farmiloe, Ltd.

Wood Pulp—		
U. States,	480 bls.	Lunham & Moore
Germany,	474	Horne & Co.
"	11	T. H. Lee
Sweden,	470 pks.	Henderson, Craig, & Co.
"	270	Tough & Henderson
"	80	W. G. Taylor & Co.
Norway,	1,070	"
Holland,	52	E. J. & W. Goldsmith
Belgium,	1,556 bls.	"

"	243	W. H. Carey & Sons
Norway,	2,765	London Paper Mills

Zinc Oxide—		
Holland,	150 brls.	M. Ashby, Ltd.
U. States,	200	"

Zinc Skimmings—		
U. States,	21 t.	Cartledge & Co.

LIVERPOOL.

Week ending June 24th.

Acetic Acid—		
Rotterdam,	17 balloons	"

Alumina—		
Antwerp,	6 cks.	J. T. Fletcher & Co.

Barytes—		
Antwerp,	43 cks. 70 bgs.	"

Bone Ash—		
Zarate,	126 bgs.	J. Nelson & Sons, Ltd.

Bone Black—		
Philadelphia,	30 brls.	E. F. Houghton & Co.

Bone Meal—		
Rangoon,	287 bgs.	"

Borate of Lime—		
New York,	1,585 bgs.	Balfour Williamson

Caoutchouc—		
Hamburg,	34 cks.	"

Castor Oil—		
Marseilles,	10 cs.	J. J. Mack & Sons
Genoa,	60	Evans & Sons, & Co.

Chemicals (otherwise undescribed)

Rotterdam,	4 cs.	"
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Citric Acid—		
Bordeaux,	2 cks.	"

Cod Oil—		
St. John's, Nfld.,	123 cks.	C. T. Bowring & Co.

Cream of Tartar—		
Oporto,	5 cks.	"
Bordeaux,	17	"

Dyestuffs—		
Cutch		
Rangoon,	1,578 bxs.	"

Divi Divi		
Hamburg,	532 bgs.	"

Extracts		
New York,	1 pkge.	"

Fustic		
Kingston,	22 ps.	"

Gambler		
Singapore,	4,241 bls.	"

Madder		
Smyrna,	10 bls.	"

Orchella		
Lisbon,	152 bgs.	W. Graham, jun., & Co.

Saffron		
Alexandria,	1 cs.	"

Shumac		
Bordeaux,	20 bls.	"

Valonia		
Palermo,	1,248 bgs.	"

Valonia		
Smyrna,	107 t. 15 c. 300 bgs.	Barry Bros.

Farina—		
Marseilles,	25 bls.	H. Tyrer & Co.
Hamburg,	200 bgs.	"

Glucose—		
Baltimore,	200 brls.	T. M. Duche & Son
New York,	100	"

"	500	"
Boston,	1,198	"

Glue—		
Rouen,	20 bgs. 47 cks.	Co-op. W'sale Society, Ltd.
Rotterdam,	246	"

"	5 brls. 10 kgs. 61 crts.	Richardson & Ward
Boston,	1 ck.	"

Lamp Black—		
Gothenburg,	25 cks.	M. Ashby, Ltd.
Philadelphia,	280 bgs.	"

Lead Acetate—		
Stettin,	56 cks.	"

Mica—		
New York,	2 brls.	Walker, Carver & Co.

Ochre—		
Marseilles,	127 brls.	"

Paint—		
Amsterdam,	20 brls.	"
Rotterdam,	2 cs.	"

Paraffin Scale—		
Rangoon,	82 bxs.	"

Phosphate—		
New York,	44 bgs.	R. Clough

Phosphate Rock—		
New York,	88 bgs.	R. Clough

Plumbago—		
Genoa,	5 bgs.	G. Huntriss & Co.

Potash—		
Dunkirk,	9 cks. 81 dms.	"
Rouen,	42	Co-op. W'sale Society, Ltd.

"	35 brls.	"
Montreal,	4	"

Potassium Chlorate—		
Rouen,	120 cks.	"

Pumice Stone—		
Messina,	20 bgs.	Thompson Musket

Pyrites—		
Huelva,	1,440 t.	Tinto et Sta Rosa Co.
"	6,751 t.	Matheson & Co.

Rosin—		
Boston,	900 brls.	"
Baltimore,	250	"

Salt—		
Hamburg,	538 cks.	H. Tyrer & Co.

Saltpetre—		
Hamburg,	14 cks.	"

Soap—		
Smyrna,	363 bxs. 2 bgs.	"

Teneriffe,	1 cs.	M'Laren, Bradbury & Co.
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Boston,	10.	"
Marseilles,	8	Globe Parcel Co.

"	45	"
Soapstone—		
Genoa,	105 bgs.	G. Huntriss & Co.

Soda—		
Philadelphia,	1 brl.	T. Lowden

Sodium Acetate—		
Rouen,	14 cks.	Co-op. W'sale Society, Ltd.

Starch—		
Baltimore,	1,000 sks. 102 bgs.	"
Boston,	250	"
Rotterdam,	80 cs.	"
Boston,	150	C. Pringo Sugar Refining Co.
Antwerp,	160 cs.	J. T. Fletcher & Co.

"	94	"
Stearine—		
St. John's, Nfld.,	51 cks.	C. T. Bowring & Co.
Antwerp,	26 bgs.	J. T. Fletcher & Co.

"	13	"
Tallow—		
New York,	65 tcs.	Colby & Co.
"	609 hds.	"
Boston,	100	Fowler Bros. Ltd.
"	181 brls.	Colby & Co.

"	50 135	"
Zarate,	241 ps.	J. Nelson & Sons, Ltd.

Tar—		
Bordeaux,	2 cs.	"

Tartaric Acid—		
Marseilles,	16 cks.	"

Treacle—		
Gothenburg,	4 cks.	G. R. Shaw & Co.

Glue—		
Philadelphia,	1,000 brls.	"
New York,	1 pkge.	Langstaff & Co.

Ultramarine—		
Rotterdam,	15 cs. 22 cks.	"

Yarnish—		
Montreal,	10 bas.	W. P. Scarfe
Bombay,	1 cs.	F. Fischer & Co.

Waste Salt—		
Hamburg,	60 t. 102 bgs.	"

White Lead—		
Antwerp,	29 cks.	"
Rotterdam,	6	"

Wood Pulp—		
Boston,	77 crts.	Lever Bros., Ltd.
Gothenburg,	213 bls.	G. F. Green & Co.
"	32	R. L. Lundgren
"	170	"

Zinc Oxide—		
New York,	100 brls.	"
Antwerp,	70	9 cks.

Zinc White—		
Hamburg,	40 cks.	"

MANCHESTER.		
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Week ending June 26th.

Acetate of Lime—		
New York,	1,016 bgs.	"

Acetic Acid—		
Rotterdam,	40 bls.	"

Albumen—		
Hamburg,	320 bls.	"

Alizarine—		
Rotterdam,	2 bxs.	88 brls.

Ammonia—		
Rotterdam,	4 kgs.	"

Aniline Colours—		
Rotterdam,	69 brls.	"

Antimony Oxalate—		
Rotterdam,	4 cks.	"

Barytes—		
Antwerp,	18 cks.	"
Rotterdam,	45	"

Beta-Naphthol—		
Rotterdam,	1 brl.	"

Bone Ash—		
Santa Elena,	726 t.	Robinson & Hadwen

Chemicals (otherwise undes.)—		
Rotterdam,	23 cks. 4 cs. 2 brls.	"

Chromum Acetate—		
Rotterdam,	5 brls.	"

Colours—		
Antwerp,	4 cks.	5 pks.
Rotterdam,	47	14 cs. 1 bx.

Cream of Tartar—		
Rotterdam,	10 cks.	"

Dextrine—		
Hamburg,	120 bgs.	"

Farina—		
Stettin,	500 bgs.	Browne, Geveke, & Co.

"	595	"
Rotterdam,	400	"
Hamburg,	50	"

Gelatine—		
Hamburg,	2 cs.	"

Glucose—		
New York,	500 brls.	T. M. Duche & Co.
"	50 bls.	"
"	650 brls.	"
Stettin,	113 cks.	"

Glue—		
Rouen,	20 bls.	Co-op. W'sale Society
New York,	10 brls.	D. Mosley & Sons

"	20 bgs.	"
Antwerp,	10 bls. 6 pks.	"
Rotterdam,	135	"
Hamburg,	50	"

Lead Acetate—		
Hamburg,	43 cks.	"

Limestone—		
Antwerp,	5 crts.	"

Naphthol—	
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HULL.*Week ending June 26th.*

Acids—			
Boston,	7 brls.	Wilson,	
Bari,	30 cks.	Sons, & Co., Ld.,	
Albumen—			
Riga,	10 cs.	Wilson,	
		Sons, & Co., Ld.	
Antimony—			
Dunkirk,	3 cks.	Wilson,	
		Sons, & Co., Ld.	
Asbestos—			
Reval,	225 bgs.		
Antwerp,	9 cts.		
Barytes—			
Ghent,	33 cks.	Hutchinson	
		& Son	
Bremen,	22	S. Tudor & Co.	
	18	G. Holmes & Co.	
Antwerp,	44	A. Sanderson & Co.	
	37	H. F. Pudsey	
Riga,	90	Wilson,	
		Sons, & Co., Ld.	
Borax—			
Hamburg,	2 cks.	Wilson,	
		Sons, & Co., Ld.	
Chemicals (otherwise undescribed)			
Hamburg,	13 cks.	Wilson,	
		Sons, & Co., Ld.	
Bremen,	7 pks.	Veltmann	
		& Co.	
Hamburg,	21	Wilson,	
Antwerp,	8	Sons, & Co., Ld.	
Dunkirk,	51	"	
China Clay—			
Hamburg,	105 cks.		
Colours—			
Ghent,	10 cks.	Wilson,	
		Sons, & Co., Ld.	
Antwerp,	5 pks.	"	
Hamburg,	6 cks.	12 cs.	"
Stettin,	10	"	
Amsterdam,	4 pks.	"	
Hamburg,	3 cks.	"	
Rotterdam,	45 brls.	W. & C. L.	
	4 bxs.	Ringrose	
Cottonseed Oil—			
New York,	200 brls.	Wilson,	
		Sons, & Co., Ld.	
Cream of Tartar—			
Rotterdam,	4 cks.	Hutchinson	
		& Son	
Dyestuffs—			
Alizarine			
Rotterdam,	45 brls.	W. & C. L.	
		Ringrose	
Extracts			
Trieste,	15 brls.	Wilson,	
		Sons, & Co., Ld.	
Fustic			
Hamburg,	180 t.	Wilson,	
		Sons, & Co., Ld.	
Madder			
Rotterdam,	2 cks.	J. Pyefinch	
		& Co.	
Myrabolams			
Bombay,	2,030 bgs.		
Shumac			
Palermo,	419 bgs.	Wilson,	
		Sons, & Co., Ld.	
	1,575		
Farina—			
Stettin,	730 bgs.	Wilson,	
		Sons, & Co., Ld.	
Glucose—			
New York,	500 brls.		
Stettin,	10 cks.	Wilson,	
		Sons, & Co., Ld.	
Amsterdam,	50 bgs.	Hutchinson	
		& Son	
Glue—			
Rotterdam,	2 bgs.	W. & C. L.	
		Ringrose	
Fiume,	100	Wilson,	
		Sons, & Co., Ld.	
Dunkirk,	10 cks.	"	
Lead Acetate—			
Hamburg,	29 cks.	Bailey &	
		Leatham, Ld.	
Limestone—			
Antwerp,	5 cts.	Wilson,	
		Sons, & Co., Ld.	
Oxalic Acid—			
Amsterdam,	2 cks.	Hutchinson	
		& Son	

Paint—

New York,	8 cs.	Wilson,	
		Sons, & Co., Ld.	
Boston,	2 brls.	Wilson,	
	1 cs.	Sons, & Co., Ld.	
Phosphate—			
Antwerp,	qty.	Wilson,	
		Sons, & Co., Ld.	
Pitch—			
Copenhagen,	100 brls.	Wilson,	
		Sons, & Co., Ld.	
Antwerp,	17 cks.	Bailey &	
		Leatham, Ld.	
Potash—			
Dunkirk,	18 cks.	Wilson,	
		Sons, & Co., Ld.	
Pumice Stone—			
Messina,	5 cs.	Wilson,	
	17 cks.	Sons, & Co., Ld.	
Saltpetre—			
Hamburg,	20 bgs.	Wilson,	
		Sons, & Co., Ld.	
Soap—			
New York,	250 bxs.	Wilson,	
		Sons, & Co., Ld.	
Boston,	12 cs.	"	
Bari,	5	"	
Soda—			
Rotterdam,	40 cks.	Hutchinson	
		& Son	
Antwerp,	100 bgs.		
Starch—			
Ghent,	229 cs.	Wilson,	
		Sons, & Co., Ld.	
Bremen,	1,558	Veltmann & Co.	
Amsterdam,	80	Hutchinson & Son	
Antwerp,	150	Wilson,	
		Sons, & Co., Ld.	
Amsterdam,	120	W. & C. L. Ringrose	
Stearine—			
Antwerp,	29 bgs.	Wilson,	
		Sons, & Co., Ld.	
Sulphur—			
Catania,	780 pks.	Wilson,	
		Sons, & Co., Ld.	
"	300	"	
Palermo,	125 bgs.	"	
Tallow—			
Dunkirk,	38 cks.	Wilson,	
		Sons, & Co., Ld.	
Tar—			
Amsterdam,	5 cks.	F. Durose	
		& Co.	
Tartaric Acid—			
Rotterdam,	4 cks.	Hutchinson	
		& Son	
Treacle—			
New York,	150 brls.	Wilson,	
		Sons, & Co., Ld.	
Boston,	380	"	
Ultramarine—			
Rotterdam,	1 ck.	Hutchinson	
		& Son	
Bremen,	20	"	
White Lead—			
Antwerp,	12 cks.	Bailey &	
		Leatham, Ld.	
Amsterdam,	37	W. & C. L. Ringrose	
Rotterdam,	10	Hutchinson & Son	
Wood Pulp—			
Hamburg,	40 bls.	Bailey &	
		Leatham, Ld.	
Drontheim,	1,840	"	
Helsingfors,	604	J. Good & Sons	

GLASGOW.*Week ending July 1st.*

Acetate of Lime—			
New York,	612 bgs.		
Acetic Acid—			
Rotterdam,	8 cks.	J. Rankine	
		& Son	
Albumen—			
Hamburg,	2 cs.		
Aniline Colours—			
Hamburg,	2 cs.		
Aniline Salts—			
Rotterdam,	8 cks.	J. Rankine	
		& Son	
Arachide Oil—			
Rotterdam,	10 cks.	J. Rankine	
		& Son	
Barium Chloride—			
Rotterdam,	4 cks.	J. Rankine	
		& Son	
Barium Sulphate—			
Antwerp,	17 cks.		

Barytes—

Rotterdam,	64 pks.	J. Rankine	
	106 cks.	& Son	
Biphosphate of Lime—			
Marseilles,	122 cs.		
Castor Oil—			
Antwerp,	57 cks.		
Chemicals (otherwise undescribed)			
Rotterdam,	5 cs.	J. Rankine	
	1 bx.	& Son	
Colours—			
Rotterdam,	6 cks.	J. Rankine	
		& Son	
Hamburg,	7	"	
Antwerp,	4	"	
Dyestuffs—			
Alizarine			
Rotterdam,	29 cks.	J. Rankine	
	24 brls.	& Son	
Aniline			
Rotterdam,	2 bxs.	J. Rankine	
	5 brls.	& Son	
Amsterdam,	1 cs.		
Cutch			
Rangoon,	302 bxs.	P. Henderson	
	7,847 cs.	& Co.	
Glucose—			
New York,	997 brls.		
Glue—			
New York,	94 brls.		
Iron Silicate—			
Almeria,	2 c.	A. B. Craig	
Magnesium Chloride—			
Hamburg,	26 cks.		
Manganese—			
New York,	64 cks.		
Oxalic Acid—			
Rotterdam,	6 cks.	J. Rankine	
		& Son	
Paint—			
Marseilles,	20 cs.		
Paraffin Scale—			
Rangoon,	244 bxs.	P. Henderson	
	470 bgs.	& Co.	
Philadelphia,	270 brls.		
Potash—			
Montreal,	22 brls.		
Rosin—			
New York,	1,750 brls.		
Savannah,	1,589	W. W. Gemmell	
		& Co.	
Salicylic Acid—			
Rotterdam,	1 bx.	J. Rankine	
		& Son	
Salt—			
Hamburg,	100 bgs.		
Saltpetre—			
Hamburg,	40 bgs.		
Soap—			
New York,	5 cs.		
Rotterdam,	2	J. Rankine & Son	
Starch—			
Rotterdam,	120 cs.	J. Rankine	
		& Son	
Antwerp,	110		
New York,	3,452 sks.		
Tallow—			
New York,	40 tcs.		
Tartar			
Bordeaux,	30 cks.		
Tartaric Acid—			
Bordeaux,	8 cks.		
Marseilles,	72 brls.		
Rotterdam,	24 cks.	J. Rankine	
		& Son	
Treacle—			
Philadelphia,	250 brls.		
Turpentine—			
Savannah,	1,650 brls.	Rowley & Dick	
Varnish—			
Marseilles,	1 brl.		
New York,	17	3 cs.	
Waste Salt—			
Hamburg,	411 cks. and qty		
Wood Pulp—			
Hernosand,	1,500 bls.	W. G. Taylor	
		& Co., Ld.	
"	1,274	Henderson, Craig,	
		& Co., Ld.	
Montreal,	1,207 bndls. and qty.		
Christiania,	3,812 bls.		
Rotterdam,	20	J. Rankine & Son	
Zinc Oxide—			
Hamburg,	5 cks.		
New York,	50 brls.		
Zinc White—			
Rotterdam,	95 pks.	J. Rankine	
		& Son	

TYNE.*Week ending June 26th.*

Alum Earth—			
Hamburg,	27 cks.	Tyne S. S. Co.	
Antimony Ore—			
Antwerp,	1,941 bgs.	Tyne S. S. Co.	
Barytes—			
Antwerp,	500 bgs.	Tyne S. S. Co.	
Rotterdam,	134	"	
Colours—			
Hamburg,	11 cks.	Tyne S. S. Co.	
Antwerp,	4	"	
Glucose—			
New York,	550 brls.	Furness,	
		Withby, & Co.	
Glue—			
Antwerp,	2 cks.	Tyne S. S. Co.	
Limestone—			
Antwerp,	9 cts.	Tyne S. S. Co.	
Ochre—			
Rouen,	260 cks.	Wm. Young	
		& Co.	
Paint—			
Hamburg,	11 pks.	Tyne S. S. Co.	
Soap—			
Rotterdam,	4 cs.		
Starch—			
Antwerp,	203 cs.	Tyne S. S. Co.	
Rotterdam,	108	"	
Tartaric Acid—			
Rotterdam,	6 cks.	Tyne S. S. Co.	
"	6	"	
Waste Salt—			
Hamburg,	150 t.	Cleghorn &	
		Wiender	
Wood Pulp—			
Christiania,	1,400 bls.		
Arendal,	25		

GOOLE.*Week ending June 23rd.*

Alizarine—			
Rotterdam,	11 brls.		
Alkali—			
Calais,	8 cks.		
Antimony Sulphide—			
Boulogne,	1 ck.		
Caoutchouc—			
Boulogne,	qty.		
Dyestuffs (otherwise undescribed)			
Rotterdam,	186 cks. 80 cs.		
Boulogne,	10 55	6 pks.	
Logwood—			
Belize,	815 t.		
Hayti,	560		
Plumbago—			
Boulogne,	1 cs.		
Potash—			
Rotterdam,	1 ck.		
Dunkirk,		20 dma.	
Calais,		15	
Pyrites—			
Huelva,	1,469 t.		
Saltpetre—			
Rotterdam,	100 bgs.		
Soda—			
Rotterdam,	45 brls.		
Tartar			
Hamburg,	10 cks.		

GRIMSBY.*Week ending June 26th.*

Aniline—			
Antwerp,			5 pks.
Hamburg,	1 ck.		
Aniline Colours—			
Hamburg,	1 ck.		
Barytes—			
Hamburg,	4 cks.		
Caoutchouc—			
Rotterdam,	1 cs.		
Hamburg,	10		
Chemicals (otherwise undescribed)			
Hamburg,	2 cs.		
Plumbago—			
Hamburg,	1 ck.		
Salt—			
Hamburg,	500 bgs.		
Wolfram Ore—			
Hamburg,	5 cs.		

EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending June 30th.

Acids—		
Alexandria, 5 cs.	£28	
Singapore, 9	19	
Cape Town, 1	16	
E. London, 25	50	
Cossack, 14	10	
Alkali—		
Alexandria, 3 c.	£9	
Hamburg, 5 t.	26	
Ammonia (Liquid)—		
Marsala, 1 dm.	£10	
Ammonium Carbonate—		
Moscow, 7 t. 10 c.	£190	
Paris, 7	14	
Rotterdam, 37 pks.	85	
Ammonium Chloride—		
Antwerp, 1 t.	£30	
Genoa, 2	6 c.	
Santos, 10	18	
Ammonium Sulphate—		
Madeira, 20 t. 9 c.	£170	
Valencia, 70	560	
Ostend, 131	10	
Burgh, 145	10	
Antigua, 25	18	
Amsterdam, 200	1,500	
Bremen, 260	2,065	
Trinidad, 31	2	
Surinam, 25	12	
Antwerp, 50	125	
Hamburg, 150	388	
Amorphous Phosphorus—		
Hong Kong, 1 cs.	£14	
Anhydrous Ammonia—		
Palermo, 3 cs.	£42	
Bisulphite of Lime—		
Calcutta, 5 t. 5 c.	£77	
Bone Ash—		
Melbourne, 1 t.	£20	
Borax—		
Auckland, 2 t. 6 c.	£33	
Rotterdam, 10	15	
Carbolic Acid—		
Higo, 50 dms.	£177	
Newport News, 80 cks.	700	
Mauritius, 10	11	
Hamburg, 40	314	
Ludwigshafen, 48	223	
Algoa Bay, 10	34	
Colombo, 6 cs.	8	
Antwerp, 8 tins.	15	
Calcutta, 2	5	
Auckland, 20	18	
Carbonic Acid Gas—		
Rockhampton, 11 cyls.	£30	
Brisbane, 15 tubes	65	
Caustic Potash—		
Nelson, 7 c.	£12	
Caustic Soda—		
E. London, 1 t. 1 c.	£20	
Shanghai, 4	6	
Nelson, 6	4	
Beira, 5	7	
Durban, 1	17	
Chemicals (otherwise undescribed)		
Boulogne, 2 cs.	£14	
Paris, 10 cks	23	
Rotterdam, 4	10	
Malaga, 8	15	
Naples, 8	16	
Hamburg, 25	40	
Duisberg, 40	175	
Perth, 63 pks.	73	
Brussels, 1	7	
Colombo, 90	447	
Fremantle, 10	19	
Lisbon, 18	3	
Treport, 18	3	
Melbourne, 75	345	
Adelaide, 49	113	
Konigsberg, 1	2	
Dunkirk, 70	31	
Pt. Elizabeth, 10	29	
Durban, 9	35	
Townsville, 46	19	
Brisbane, 3	14	
Higo, 70 kgs.	25	
Cape Town, 10	1	
Valparaiso, 1	15	
Calcutta, 15	22	
Singapore, 10	64	
Aden, 28	21	

Citric Acid—

Oporto, 2 cks.	£12
Cape Town, 2 c.	12
Libau, 4	24
Pt. Elizabeth, 1	6
Athens, 1	11
Brussels, 10	35 kgs 269
Adelaide, 3	18
Amsterdam, 13	80
Auckland, 2	12
Rotterdam, 37	224
St. Petersburg, 61 pks.	410
Stettin, 3 cks.	122
Newcastle, 2	15
Cologne, 10	61
Hamburg, 35	203
Copenhagen, 10	60

Coal Products—

Allzarine		
Montreal, 15 cks.	£103	
New York, 25	284	
Aniline		
Shanghai, 25 cs.	£99	
Calcutta, 2	140	
Sydney, 1	7	

Anthracene

Amsterdam, 295 cks.	£303
Dusseldorf, 850	2,154
Cologne, 113	459

Benzol

Hamburg, 62 pms.	£480
Rotterdam, 48 cks.	295

Colours

Boston, 1 ck.	£17
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Creosote Oil

Boston, 25 cks.	£18
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Naphtha

Ghent, 22 brls.	£50
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Pitch

Boston, 500 cks.	£242
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Philadelphina

Calcutta, 100	25
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Newport News

125	9 brls.
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Mauritius

200 t.	10 15 kgs. 14
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Helsingfors

100	44
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St. John, N.E.

100	50 cks. 40
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Antwerp

2,0 t.	281
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Tar

Cape Town, 12 cks.	£9
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Hamburg

150 brls.	57
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Helsingfors

700 rmls.	887
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Newfairwater

150	75
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Stettin

100	46
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Wellington

1	5
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Trinidad

10	6
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Pt. Elizabeth

190 dms.	12
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Marseilles

25 cks.	£47
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Coal Products (otherwise undescribed)

Rotterdam, 10 brls.	£20
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Copper Sulphate—

Rotterdam, 5 t.	£80
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Rouen

5	81
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Newcastle

1	17
---	----

Alexandria

11 c.	14
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Odesa

35	580
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E. London

5	5
---	---

Paris

61	509
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Suakim

5	5
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Treport

14	5
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Antwerp

5	9
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Brisbane

1	16
---	----

Dunkirk

5	83
---	----

Hamburg

1	5
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Cream of Tartar—

Newcastle, 13 c.	£53
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Sydney

1 t.	5
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Fremantle

1 tank	10
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Adelaide

10	39
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Canterbury

10	39
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Disinfectants—

Melbourne, 112 pks.	20 cs. 67
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Pt. Elizabeth

200 kgs.	60
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New York

50 cks.	—
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Sydney

6	4 dms 18
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Rotterdam

4	10
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Brisbane

6 cs.	12
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E. London

3	14
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Hamburg

50	250
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Durban

3 t. 56	35 200 dms. 284
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Manure—

Ghent, 41 t.	5 c. £25
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Lyttelton

20	8
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Hamburg

2	10
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Fremantle

25	10
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Morlaix

190	1,700
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Martinique, 133	3	390
Madeira, 70		415
Dunedin, 100		268
Pt. Elizabeth, 4		19
Demerara, 50	11	400
Surinam, 50	2	440
Grenada, 4		29
Canaria, 21	10	75
Meinel, 700		1,400

Potassium Bicarbonate—

Philadelphia, 16 c.	£20
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Potassium Bichromate—

Wiborg, 13 c.	£30
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Potassium Chlorate—

Hong Kong, 1 t. 5 c.	£47
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Potassium Chloride—

Calcutta, 20 t.	£195
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Potassium Cyanide—

Newport News, 112 cs.	£287
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Rio de Janeiro

1 t.	149
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Melbourne

25	210
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Sydney

50	420
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Auckland

6	6 c.
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Potassium Prussiate—

Genoa, 1 t.	£48
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Antwerp

15 cks.	250
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Hamburg

2	24
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Rotterdam

17	227
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Salt Cake—

Ghent, 700 t.	£100
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Saltpetre—

Amsterdam, 4 t. 1 c.	77
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Newcastle

10	11
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Santos

2	47
---	----

Lisbon

1	16
---	----

Oporto

3	14
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Durban

15	15
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Salts of Potash—

Auckland, 6 t. 6 c.	£167
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Sheep Dip—

Cape Town, 200 dms	£40
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Sydney

890	500
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Pt. Elizabeth

3 t. 5 c.	62
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Durban

1,035	267
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Launceston

2	30
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Adelaide

50	9
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Calcutta

200 pks.	500
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Soap—

New York, 9 t. 7 c.	£1
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Ancona,	73	
Antwerp,		6 brls.
Bahia,	50	
Baltimore,	500	
Barcelona,	231	
Beyrout,	65	
Bilbao,	30	
Boston,	100	30
Brisbane,	69	
Callao,	139	
Cartagena, N.G.,	60	
Dunedin,	45	
Fiume,	30	
Fremantle,	15	
Galatz,	105	
Genoa,	247	
Halifax,	18	
Hamburg,	157	
Hawke's Bay,	30	8 bxs.
Hioho,	723	
Honolulu,	20	
Libau,	18	
Lisbon,	27	6 cks.
Malta,	38	
Melbourne,	213	
M. Video,	150	
Montreal,	57	
Nagasaki,	200	
Naples,	37	
N. Orleans,	250	
New York,	1,156	
Odessa,	70	
Oporto,		4
Para,	50	
Paris,	18	
Pelotas,	80	
Penang,	2	
Philadelphia,	805	
Port Natal,	7	
Rangoon,	7	
Rio de Janeiro,	124	
Rouen,	18	
Salaverry,	10	
San Jose,	28	
San Sebastian,	100	
Santos,	70	
Seville,	2,100	
Sydney,	232	
Talcahuano,	30	
Tarragona,	90	
Valencia,	10	
Valparaiso,	395	
Yokohama,	50	
Bari,	112	

Chemicals (otherwise undies.)—

Yokohama,	2 t.	10 c.	£70
Halifax,	10		13
Boston,	10		55
B. Ayres,	19	3 q.	27
Madras,	8		12
Palermo,	3		5
Naples,	1		31
Copenhagen,	7		11
Galatz,	10		75
Hamburg,	3		84
Calcutta,			136
Philadelphia,	27		824
Stettin,	5		178
Kurrachee,	15		22

China Clay—

Barcelona,	100 bgs.	
Boston,	1,754 cks.	
Calcutta,	680	
Montreal,	60	
Naples,	40	
Philadelphia,	301	
Rio de Janeiro,	40	

Chromium Oxide—

Lisbon,	1 ck.	£9
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Citric Acid—

Honolulu,		1 q.	£5
Piræus,	1 c.		6
Vera Cruz,	4		23

Coal Products—

Aniline Dyes		
New York,	32 cs.	
Aniline Oil		
Barcelona,	38 cks.	
Genoa,	3 dms.	
Aniline Salts		
Boston,	56 cs.	
Anthracene		
Rouen,	160 kgs.	
Pitch		
Antwerp,	240 t.	
Marseilles,	515	
Tar		
Bordeaux,	250 cks.	
Boston,		69 kgs.
Callao,		20 brls.
Galatz,		50
King's Cove,		32
New York,	160	
Philadelphia,		220
Port Natal,	210 dms.	
Savannah,	23	

Copper Sulphate—

Melbourne,	1 t.	£16
Gutajewsky,	5	5 c.
Talcahuano,	11	1
Odessa,	1	
Bordeaux,	4	17
Callao,	1	7
Konigsberg,	1	10
Malmo,	7	3
Montreal,	2	17
B. Ayres,	2	10
Tampico,	9	19
Nantes,	4	18
Leghorn,	4	15
Sourabaya,	5	17
Samarang,	11	15
Bombay,	2	10
Ghent,	30	1
St. Petersburg,	16	2
Antwerp,	3	19
Calcutta,	20	335
Marseilles,	26	17
Rouen,	5	3
Genoa,	10	1
Halifax,	1	1
Galatz,	4	3
New York,	32	17
Braila,	5	14
Naples,	15	3
Piræus,	2	16
Ibrail,	5	78
Rotterdam,	15	1
Fiume,	19	19

Copperas—

Syria,	3 t.	18 c.	£9
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Disinfectants—

Calcutta,	14 t.	3 c.	2 q.	£293
C. C. Castle,	40	gallons		7
Philadelphia,	2	cs.		5

Guano—

Motril,	33 t.	19 c.	£221
Honolulu,	155		1,425

Iron Oxide—

Halifax,	1 t.	10 c.	£16
Rouen,	5	6	32
Gijon,	1	13	9

Lime—

Demerara,	57 t.	15 c.	£94
Little Popo,			40 brls.
Lagos,	8	1	2 q.
Old Calabar,	3		5
Anamaboe,	9	16	14

Magnesia—

Havana,	3	cs.	
San Juan,	20		
Tampico,	14		
Vera Cruz,	10		

Magnesium Carbonate—

San Juan,	6 c.	2 q.	£13
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Magnesium Chloride—

Bombay,	10 t.	10 c.	£28
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Magnesium Sulphate—

Montreal,	25	bgs.	10 brls.
Naples,	6	cks.	

Manure—

Las Palmas,	5 t.	£19
Nantes,	20	159
Gd. Canary,	4	17

Mineral White—

Delagoa Bay,	10 t.	
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Ochre—

Boca,	70	kgs.	
B. Ayres,	70		

Paint—

Alexandria,	22	brls.	
Beyrout,			51 kgs.
B. Ayres,	15	cks.	
Calcutta,			30 dms.
Callao,	113		
Ferrol,	2		
Gibraltar,	3		20
Halifax,	9		
Havana,	15		23
Manaos,	9		30
Messina,			60 pks.
Para,			20
Port Natal,			32 brls.
Rio Grande do Sul,			100
Santos,			15 cs.
Victoria,	2		

Painters' Colours—

Bahia,	40	cks.	
Baltimore,	9		10 brls.
Alexandria,	5		44
B. Ayres,	17	cs.	
Calcutta,	20		4
Callao,	20		1 dm.
Demerara,			20 kgs.
Galatz,			150
Halifax,	76		

Havana, 4 brls.

Hong Kong,	42	10
Lisbon,	12	
Montreal,	4	cs.

Paraffin Wax—

Bari,	20	bgs.	
Galatz,	65		
Hong Kong,	60	dms.	

Phosphorus—

Hioho,	5 t.	£1,310
Shanghai,	0	1,220
Vera Cruz,		18 c.

Potash—

B. Ayres,	8 c.	2 q.	£5
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Potassium Bichromate—

New York,	4 c.	£8
Rio de Janeiro,	7	2 q.
Havana,	7	16
Salonica,	9	20

Potassium Chlorate—

Gothenburg,	2 t.	10 c.	£90
Ancona,	15		24
Bari,	2	10	83
Amsterdam,	4		7
Rio de Janeiro,	2		3
Vera Cruz,	3		120
Kobe,	12	10	407
Shanghai,	8	10	276
Yokohama,	20		676
Stettin,	1	3	35
Philadelphia,	2	10	90
Melbourne,	1		33
St. Petersburg,	2	20	83
Copenhagen,	5		173
Gutajewsky,	82	10	2,685
Rotterdam,	3	5	115
Hioho,	30		1,018
Hamburg,	6	2	192
Sydney,	5		161
Boston,	32	10	1,138
New York,	86	3	2,918

Salt—

Adelaide,		11 c.	
Antwerp,	420	t.	180 cs.
Axim,		13	
Barbadoes,	50		
Bilbao,		8	
Boston,	200		
Brisbane,	200		
B. Ayres,	71	9	
Calcutta,	3,360		
C. C. Castle,	10		
Cape Lopez,	5		
Cape Town,	25		
Copenhagen,	124		
Ghent,	50		
Halifax,	317		
Hamburg,	100		
Kingston,	97		
Melbourne,	280		
Monrovia,	1		
Montreal,	893		13,014 cks.
N. Orleans,	110		
New York,	206	10	
Para,	300		
Rio Grande do Sul,	300		

Salt Cake—

Rio de Janeiro,	1		
Rotterdam,	321		
Salt Pond,	25		
Trinidad,	24	2	
Valparaiso,	2	6	
Westervick,	381		

Salt Dip—

Antwerp,	60	t.	£68
Wellington,	5	5 c.	12
Callao,	25		68

Saltpetre—

Larnaca,	1 t.	£20
Pernambuco,	2	17
		1 q.

Sheep Dip—

Bahia Blanca,	22	t.	16 c.
Algoa Bay,	16	2	1
B. Ayres,	70		1,600
Calcutta,	2	10	55
N. Orleans,	100	glns.	18

Soap—

Accra,	200	bxs.	
Alexandria,	65		
Amsterdam,	100		
Antwerp,			1,750 cs.
Baltimore,			1 ck.
Barbadoes,	2,285		
Bombay,	250		8
B. Ayres,			1
Calcutta,	50		7
Callao,			3
Cape Town,	2,574		
Cartagena, N.G.,			1
Copenhagen,	100		1
Coronel,			1
Demerara,	1,003		
Dunedin,			400
E. London,	1,625		25
Gd. Canary,	564		

Gd. Bassa, 85

Gibraltar,	36	kgs.	45
Hamburg,			175
Havre,	100	bxs.	210
Hong Kong,	833		
Las Palmas,	700		
Lagos,	145		
Mauritius,	2,051		
M. Video,			45 dms.
Montreal,			1,603
Mossel Bay,	675		
N. Orleans,	450		
Parana,			1
Pt. Louis,	25		
Pt. Natal,			985
Rangoon,			9
Rotterdam,	231		1,185
St. John's,	350		43
Sierra Leone,			1
Singapore,	450		
Smyrna,			20
Trinidad,	200		
Wellington,			600

Soda—

Halifax,	30	pks.	
Montreal,	100	bgs.	

Soda Alkali—

Dunedin,			40 brls.
Genoa,			95
Melbourne,			146

Soda Ash—

Adelaide,			21 cks.
Antwerp,	150	bgs.	94
Bombay,	100	kgs.	
Boston,	8.0	bgs.	305
B. Ayres,			50 brls. 100
Calcutta,			35 kgs.
Constantinople,			50
Copenhagen,			350 bgs.
Coquimbo,			5
Ghent,	100	100	
Hamburg,	370		
Karachi,	250	kgs.	
Melbourne,			180
Montreal,			50 bgs.
New York,	85		26
Para,			20
Philadelphia,			345 tcs.
Piræus,			80 brls.
Puerto Cabello,			8
Pt. Natal,			24
Rio de Janeiro,			2,510
Rotterdam,	250		
Samarang,			5

Trinidad,	100 kgs.	
Valencia,	110	
Yokohama,	2,000	
Sodium Carbonate—		
Boston,	56 brls.	
Sodium Chlorate—		
Gutjewsky,	500 kgs.	
St. Petersburg,	4 brls.	
Sodium Hypsulphite—		
Naples,	10 kgs.	
Strontia—		
Hamburg,	2 t. 2 c.	£20
Sulphur—		
Boston,	275 t. 11 c.	£1,171
Montreal,	110 2	526
Callao,	7 5	24 45
Sulphuric Acid—		
Manoas,	7 c.	£6
Rio de Janeiro,	1 t.	9
Superphosphates—		
Gd. Canary,	7 t. 10 c.	£25
Barcelona,	35 2	134
Las Palmas,	10	45
Tartaric Acid—		
New York,	10 c.	£65
Tin Crystals—		
Montreal,	3 c. 2 q.	£12
Varnish—		
Antwerp,	4 brls.	
Demerara,	10	
White Lead—		
B. Ayres,	200 kgs.	
Cape Town,	120 dms.	
Zinc Chloride—		
Yarna,	10 t.	£140
Ibrai,	3 7 c.	80

MANCHESTER.

Week ending June 30th.

Aniline Colours—		
Rotterdam,	1 ck 1 cs. 2 kgs.	
	1 brl.	
Rouen,	1	
Aniline Oil—		
Antwerp,	5 dms.	
Hamburg,	5	
Aniline Salts—		
Antwerp,	10 cks.	
Rotterdam,	1 pk.	
Castor Oil—		
Sarp-borg,	1 cs	
Chemicals (otherwise undescribed)		
Hamburg,	10 cks.	
Glue—		
Antwerp,	6 cks.	
Rotterdam,	30	
Painters' Colours—		
Hamburg,	1 kg. 2 cs.	
Pitch—		
Antwerp,	8,115 c.	
Soap—		
Bushire,	1 cs.	
Tar Oil—		
Hamburg,	4 cks.	

HULL.

Week ending June 26th.

Ammonium Sulphate—		
Stettin,	463 bgs.	
Caustic Soda—		
Helsingfors,	47 cks.	
Riga,	395 dms.	
Wyburg,	11	
Chemicals (otherwise undescribed)		
Amsterdam,	68 cks. 9 pls.	
Abo,	41	
Bergen,	2	
Bremen,	3	
Christiania,	15 1 cs 36 ¹ / ₂ slbs.	
Gothenburg,	13	
Helsingfors,	6 pks.	
Hamburg,	5 220	
Konigsberg,	9	
Riga,	10	
Rotterdam,	4 28	
St. Petersburg,	10	
Stettin,	5	136
Stockholm,	5	
Wasa,	15	
Wyburg,	1	
Cottonseed Oil—		
Antwerp,	347 c.	
Amsterdam,	454	
Bremen,	201	
Christiania,	3	

Dunkirk,	697	
Gothenburg,	3	
Hamburg,	562	
Rotterdam,	271	
Stockholm,	402	
Creosote—		
Antwerp,	21 dms.	
Dyestuffs (otherwise undescribed)		
Boston,	10 cks.	
Danzig,	4 pks.	
Hamburg,	17	
Rotterdam,	5 kgs.	
Linseed Oil—		
Antwerp,	100 c.	
Bergen,	307	
Copenhagen,	17	
Christiania,	1,738	
Christiansund,	245	
Drontheim,	179	
Hamburg,	326	
Rotterdam,	318	
Stavanger,	1,035	
Manure—		
Libau,	500 t.	
Molasses—		
Abo,	20 cks.	
Paint—		
Hamburg,	26 kgs.	
Rotterdam,	1 ck.	
Painters' Colours—		
Antwerp,	28 cks. 2 cs. 9 dms.	
Abo,	100	
Copenhagen,	32	
Christiania,	2 1 60	
Danzig,	10	
Gothenburg,	1	
Helsingfors,	83	
Hamburg,	4	16 pks.
Konigsberg,	34 cks.	
Riga,	30 2	
Rotterdam,	38 1	
St. Petersburg,	6 1	
Stettin,	3 3,040 c.	
Wasa,	165	
Pitch—		
Antwerp,	160 t.	
Soap—		
Stettin,	1 cs.	
Starch—		
Bergen,	32 bls.	
Danzig,	50 cs.	
Tallow—		
Amsterdam,	29 cks.	
Stockholm,	9	
Tar—		
Antwerp,	2 cks.	
Abo,	25	
Bremen,	15	
Copenhagen,	11	
Dunkirk,	25 brls.	
Gothenburg,	5	
Hamburg,	150	
Wyburg,	50	
Treacle—		
Wasa,	13 cks.	
Varnish—		
Antwerp,	2 cs. 1 dm.	
Danzig,	1	
Hamburg,	1 2	

GLASGOW.

Week ending July 15.

Ammonium Sulphate—		
Antigua,	35 t. 10 c.	
Sourabaya,	44 5	
Cullera,	97 4 ¹ / ₂	
U.S.A.,	30 11	
Valencia,	52 5 ¹ / ₂	
Hamburg,	101 6	
Benzol—		
Rotterdam,	50 brls.	
Bleaching Powder—		
Calcutta,	88 t. 17 c.	
Boracic Acid—		
Hioho,	£61	
Bombay,	45	
Borax—		
Canada,	£43 11s.	
Carbolic Acid—		
Bombay,	£50	
Chemicals (otherwise undescribed)		
Pt. Louis,	£75	
Coal Products—		
Creosote Oil		
France,	£167	

Pitch		
Canada,	£106	
Bombay,	115	
Gothenburg,	145	
Spain,	200	
Tar		
Canada,	£103	
Christiania,	10 brls.	
Tar Oil		
Hamburg,	2 t. 3 c.	
Coal Products (otherwise undes.)—		
Rotterdam,	£225	
Linseed Oil—		
32 cks.		
Cod Oil—		
Rouen,	£35	
Dyestuffs (otherwise undescribed)		
Montreal,	£171	
Extracts—		
Canada,	£255	
Toronto,	67	
Christiania,	18	
Farina—		
U.S.A.,	5 t.	
Gelatine—		
New York,	£322	
Guano—		
Samarang,	9 t. 2 c.	
Linseed Oil—		
Canada,	4 t. 7 ¹ / ₂ c.	
Calcutta,	19 ¹ / ₄	
Logwood—		
Canada,	£30	
Magnesium Sulphate—		
Christiania,	10 t.	
Manganese—		
Genoa,	£20	
Rotterdam,	37 cks.	
Paint—		
Bangkok,	£27	
Havana,	20	
Colombo,	69	
Painters' Colours—		
Genoa,	£38	
Gibraltar,	qty.	
Singapore,	29	
Calcutta,	"	
Cape Town,	"	
Montreal,	301	
Paraffin Wax—		
Amsterdam,	5 cs.	
Bordeaux,	£80	
Cape Town,	36	
Phosphoric Acid—		
Christiania,	£1	
Potash Salts—		
Mexico City,	£255	
Potassium Bichromate—		
Antwerp,	£203	
Ghent,	98	
Rouen,	256	
U.S.A.,	830	
Potassium Prussiate—		
Genoa,	£46	
New York,	318	
Salt—		
Saigon,	2 t. 4 c.	
Christiania,	2 cks.	
Saltpetre—		
Hioho,	2 t. 3 c.	
Canada,	1 1	
Seap—		
New York,	1 t. 7 ¹ / ₂ c.	
E. London,	2 10	
Sodium Bichromate—		
Ghent,	2 t. 19 ¹ / ₄ c.	
Rouen,	26 13 ¹ / ₄	
Sulphuric Acid—		
Colombo,	£82	
Tallow—		
Rotterdam,	5 t. 9 c.	
Paris,	£215	
Treacle—		
Christiania,	34 t. 13 c.	
Bergen,	15	
Gothenburg,	21	

TYNE.

Week ending June 26th.

Alkali—		
Gothenburg,	5 t. 4 c.	
Hamburg,	2 3	
Rotterdam,	1 3	
Christiania,	1 13	
Kalmar,	17 5	
Alumina Sulphate—		
Rouen,	2 t. 1 c.	
Copenhagen,	2	

Ammonium Sulphate—		
Odense,	5 t.	
Antimony—		
Hamburg,	35 t.	
Barium Binoxide—		
Rouen,	42 t. 4 c.	
Bleaching Powder—		
Konigsberg,	6 t. 14 c.	
Aarhus,	2 12	
Barcelona,	10 3	
Antwerp,	30 5	
Rotterdam,	10 15	
Christiania,	17 1	
Copenhagen,	62 14	
Odense,	1 15	
Odessa,	12 9	
Carbolic Acid—		
Bergen,	1 ck.	
Caustic Soda—		
Konigsberg,	14 t. 10 c.	
Barcelona,	50 12	
Gothenburg,	4 18	
Antwerp,	10 14	
Hamburg,	20 10	
Rotterdam,	5 10	
Christiania,	2 18	
Copenhagen,	5	

Copperas—		
Bergen,	2 t. 3 c.	
Fluor Spar—		
Gothenburg,	51 t.	
Magnesia—		
Barcelona,	3 t. 15 c.	
Antwerp,	2	
Hamburg,	5	
Manure—		
Tarragona,	10 t.	
Ochre—		
Christiania,	1 t. 12 c.	
Paint—		
Hamburg,	1 t. 10 c.	
Phosphorus—		
Barcelona,	2 t. 1 c.	
Soda—		
Gothenburg,	4 t. 14 c.	
Antwerp,	9 13	
Rotterdam,	75 19	
Christiania,	10	
Svalboer,	4 19	
Kalmar,	25 2	
Soda Ash—		
Konigsberg,	123 t. 18 c.	
Kalmar,	68 12	
Sodium Sulphate—		
Gothenburg,	220 t.	
Helsingfors,	300	
Superphosphates—		
Tarragona,	20 t.	
Varnish—		
Tromso,	1 t. 3 c.	
White Lead—		
Copenhagen,	4 t.	
Bergen,	2 4 c.	
Whiting—		
Tromso,	10 c.	

GOOLE.

Week ending June 23rd.

Chemicals (otherwise undescribed)		
Amsterdam,	6 cks.	
Antwerp,	1	
Hamburg,	36	
Harlingen,	1	
Coal Products (otherwise undes.)—		
Antwerp,	147 cks.	
Boulogne,	29 3 cs. 4 pks.	
Ghent,	1 1	
Hamburg,	6	
Rotterdam,	66	
Dyestuffs (otherwise undescribed)		
Ghent,	1 ck. 14 bgs.	
Logwood—		
Hamburg,	50 bgs.	
Pitch—		
Antwerp,	606 t.	

GRIMSBY.

Week ending June 26th.

Chemicals (otherwise undescribed)		
Antwerp,	10 cks.	
Coal Products (otherwise undes.)—		
Antwerp,	2 cs.	
Dieppe,	139 cks. 25 52 t.	

PRICES CURRENT.

WEDNESDAY, JULY 7TH, 1897.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary

Acids:—		£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/10½	&	8/9
" Glacial	"	40/-		
Arsenic S.G., 2000°	"	1	4	0
Fluoric	per lb.	0	0	3¼
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0	10
" (Cylinder), 30° Tw.	"	0	3	0
Nitric 80° Tw.	per lb.	0	0	1¾
Nitrous	"	0	0	1¾
Oxalic	nett	0	0	3¼
Phosphoric, 1750°	"	0	0	11½
Picric	"	0	0	11
Sulphuric (fuming 50 %)	per ton	15	10	0
" (monohydrate)	"	5	10	0
" (Pyrites, 168°)	"	3	0	0
" " 150°	"	1	5	0
" (free from arsenic, 145°)	"	1	7	6
Sulphurous (solution) S.G. 1025	"	3	0	0
Tannic (pure)	per lb.	0	1	2½
Tartaric	"	0	1	1
Arsenic, white powdered	nett per ton	22	5	0
Alum (loose lump)	"	4	10	0
Alumina Sulphate (pure)	"	4	2	6
Aluminoferrous	"	2	3	6
Aluminium (Ingot metal 98/99¼ %)	nett	148	0	0
Ammonia, Anhydrous	per lb.	0	1	3
" 880=28° B.	"	0	0	2¾
" =24° B.	"	0	0	1¾
" Carbonate	nett	0	0	3
" Muriate	per ton	18	5	0
" (sal-ammoniac) 1st & 2nd	per cwt.	33/-	&	31/-
" Nitrate	per ton	32	0	0
" Phosphate	per lb.	0	0	4½
" Sulphate (grey) London	per ton	7	10	0
" (grey) Hull	"	7	10	0
Aniline Oil (pure)	per lb.	0	0	6¾
Aniline Salt	"	0	0	6¾
Antimony	per ton	30	0	0
" (tartar emetic)	per lb.	0	0	9
" (golden sulphide)	"	0	0	10
Barium Chloride	per ton	6	12	6
" Carbonate (native)	"	3	10	0
" Sulphate (native levigated)	"	42/6	to	65/-
Bleaching Powder, 35 %	nett	6	7	6
" Liquor, 7 %	"	3	10	0
Bisulphide of Carbon	"	12	0	0
Chromic Acetate (crystal)	per lb.	0	0	6
Calcium Chloride	per ton	2	2	6
China Clay (at Runcorn) in bulk	"	15/-	to	30/-
Coal Tar Products and Dyes:—				
Alizarine (artificial) 20 %	nett per lb.	0	0	6¾
Magenta	"	0	3	6
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0	0	6½
Benzol, 90's	per gallon	0	2	3
" 50/90	"	0	2	2
Carbolic Acid (crude 60°)	per gallon	0	1	11
" (crystallised 40°)	per lb.	0	0	7¾
" (liquid 95/97 %)	per gallon	0	1	0
Creosote (ordinary)	"	0	0	2
" (filtered for Lucigen light)	"	0	0	2½
Crude Naphtha 30 % @ 120° C.	"	0	0	11
Grease Oils, 22° Tw.	per ton	2	15	0
Pitch, f.o.b. Liverpool or Garston	"	1	1	0
Solvent Naphtha, 90 % at 160°	per gallon	0	1	6½
Copper	per ton	48	0	0
" Sulphate	"	16	0	0
" Oxide (copper scales)	"	44	10	0
Glycerine (crude)	"	30	0	0
" (distilled S.G. 1250°)	"	60	0	0
Iodine	nett, per oz.	0	0	7½
Iron Sulphate (copperas)	per ton	1	10	0
" Sulphide (antimony slag)	"	2	0	0
Lead (sheet) for cash	"	13	8	9
" Litharge Flake (ex ship)	"	14	15	0
" Acetate (white ")	"	21	15	0
" " brown ")	"	15	0	0
" Carbonate (white lead) pure	"	16	15	0
" Nitrate	"	19	0	0
Lime, Acetate (brown) (ex ship)				
" " (grey) (ex ship)	per ton	4	17	6
Magnesium (ribbon and wire)	per oz.	0	2	5
" Chloride (ex ship)	per ton	2	10	0
" Carbonate	per cwt.	1	17	6
" Calcined Magnesia	per ton	9	0	0
" Sulphate (Epsom Salts)	per ton	2	15	0
Manganese, Sulphate	"	16	0	0
" Borate	per cwt.	2	10	0
" Ore, 70 %	per ton	3	10	0
Methylated Spirit, 61° O.P.	per gallon	0	1	8
Naphtha (Wood), Solvent	"	0	2	9
" " Miscible, 60° O.P.	"	0	3	6
Oils:—				
Cotton-seed	per ton	15	10	0
Linseed	"	16	5	0
Stearine	per ton	19	10	0
Phosphorus (yellow)	per lb.	0	2	2
" (red)	"	0	2	8
Potassium (metal)	per oz.	0	3	7
" Bichromate	nett per lb.	0	0	4½
" Carbonate, 90% (ex ship)	per ton	16	10	0
" Chlorate	per lb.	0	0	4
" Cyanide, 98%	"	0	0	9¾
" Hydrate (Caustic Potash) 90 %	per ton	24	0	0
" " (Caustic Potash) 75/80 %	"	20	15	0
" " (Caustic Potash) 70/75 %	"	19	15	0
" Nitrate (refined)	per cwt.	1	1	6
" Permanganate	per cwt.	3	15	0
" Prussiate Yellow	per lb.	0	0	5½
" Sulphate, 90 % (ex ship)	per ton	9	15	0
" Muriate, 80 % (do.)	"	8	10	0
Silver (metal)	per oz.	0	2	3½
Sodium (metal)	per lb.	0	2	11
" Carb. (refined Soda-ash) 48 %	nett per ton	4	15	0
" " (Caustic Soda-ash) 48 %	"	4	5	0
" " (Carb. Soda-ash) 48 %	"	4	0	0
" " (Alkali) 58 %	"	3	17	0
" " (Soda Crystals)	"	2	5	0
" Acetate (ex-ship)	"	12	5	0
" Arseniate, 45 %	"	14	7	6
" Chlorate	per lb.	0	0	4¾
" Borate (Borax)	net, per ton	15	0	0
" Bichromate	per lb.	0	0	3¾
" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	"	9	0	0
" " (74 % Caustic Soda)	"	8	0	0
" " (70 % Caustic Soda)	"	7	2	6
" " (60 % Caustic Soda)	"	6	2	6
" " (pure liquor 90° Tw.)	"	3	12	6
" " 77/78 % powdered (99 % hydrate)	"	12	15	0
" Bicarbonate	"	6	10	0
" Hyposulphite	"	5	0	0
" Manganate, 25%	"	15	0	0
" Nitrate (95 % ex-ship Liverpool)	per cwt.	0	7	4½
" Nitrite, 98 %	per ton	30	0	0
" Phosphate	"	10	10	0
" Silicate (glass)	per ton	4	10	0
" " (liquid, 100° Tw.)	"	3	10	0
" Stannate, 40 %	per cwt.	3	2	9
" Sulphate (Salt-cake)	per ton	0	19	0
" " (Glauber's Salts)	"	1	7	6
" Sulphide	"	6	15	0
" Sulphite	"	5	0	0
Strontium Hydrate, 100%	"	10	15	0
Sulphocyanide Ammonium, 95 %	per lb.	0	0	6
" Barium, 95 %	"	0	0	4½
" Potassium	"	0	0	6¾
Sulphur (Flowers)	per ton	7	10	0
" (Roll Brimstone)	"	6	10	0
" Brimstone: Best Quality	"	4	12	6
Superphosphate of Lime (26%)	"	2	5	0
Tallow	"	18	0	0
Tin Crystals	per lb.	0	0	4¾
" English Ingots	per ton	66	0	0
Zinc (Spelter)	"	17	5	0
" Chloride (solution, 100° Tw.)	"	4	17	6
" Sulphate, Crystal	"	5	2	6

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Contents.

	PAGE		PAGE
Current Topics	33	Tar and Ammonia Products	40
Gold Output in the Rand	34	Miscellaneous Chemical Market	40
The Future of the Russian Oil Trade	34	Report on Manure Material	40
The Patent List	35	Liverpool Oil and Colour Market	41
Abstracts of Latest Complete Specifications	35	The Metal Markets	41
The Critical Position of Sodium Nitrate	35	Hull Paint, Oil, and Colour Report	41
Legal Intelligence	36	West of Scotland Chemicals	41
Salford Sewage Scheme	37	Tyne Chemical Report	41
Selected Correspondence	37	New Companies	42
Society of Chemical Industry	38	Gazette Notices	42
		Imports	42
		Exports	45
		Prices Current	48

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Readers are invited to forward items of intelligence, or cuttings from local newspapers, of interest to the trades concerned.

Communications for the Editor, if intended for insertion in the current week's issue, should reach the office not later than **Tuesday morning**.

Articles, reports, and correspondence on all matters of interest to the Chemical and allied industries, home and foreign, are solicited. Correspondents should condense their matter as much as possible, write on one side only of the paper, and in all cases give their names and addresses, not necessarily for publication. Sketches should be sent on separate sheets.

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Advertisements intended for insertion in the current week's issue should reach the office by **Thursday morning** at the latest.

CURRENT TOPICS.

WATER GAS AND "GASSING."

AS the use of water-gas spreads the risk of accidents increases. This risk is not so much due to leakages in houses as to the leakages at the source of production. Moreover, a case of gassing pure and simple occurred at Bury last week. These facts show that the need for better knowledge about the treatment of cases of "gassing" is a growing one.

It is most regrettable that at a gasworks like that at Bury a man should be allowed to enter a still in which sulphuretted hydrogen was known to exist without having been provided with suitable apparatus that would have rendered an accident impossible.

The case only emphasises the difficulty of coping with the carelessness of workmen. It was largely the man's own fault that he lost his life, as he re-entered the still against orders; but the fact remains that men will do these things. Yet such neglect as well as the loss of time entailed in the waiting system can both be overcome by providing one of the numerous suitable respirators that are now made. Presumably any such contrivance was not available on the works, supposing its existence was known.

It is most unfortunate that the multiplication of these wholly avoidable fatalities should take place in connection with the chemical side of gas works procedure, and apparently it is only by frequent reference to the existence of preventive methods and appliances that any change for the better can be achieved.

THE WELSH COAL TRADE.

Although the current reports of the Welsh Colliery Companies are favourable, it is not pleasant to have to face the fact that there are troubles ahead in the near future.

When the restriction of output was suggested, according to the demand and the prices of the market, it was the small owners who seemed to approve most. But it was apparent from the very outset almost that the larger companies would have to sacrifice their interests for the benefit of those who were weaker in finance though stronger in numbers, if the scheme of limiting the vend was strictly adhered to.

The proposed artificial restraint on coal production is therefore now practically dead. But what has it led to? Putting aside all pessimistical proclivities, it is impossible to overlook the chagrin and the irritation which the Welsh miners are expressing in various ways on account of what they call "the fast and loose" manner in which a section of the employers have treated them. They evidently doubt the sincerity of the employers in proposing a combination to regulate the output. From past experience of the want of cohesion that obtains among the coalowners the workmen would not be unwarranted if they described the negotiations of the past nine months as a mockery. The

resentment of the men at the manner in which, as they allege, they have been "played with" by the promoters of the plan for "regulating the supply" is a matter for consideration on the part of South Wales colliery owners. The men are once more taking up the vexed question of the minimum wage. One solution of the riddle is that a "minimum" wage is what a man is worth, and a "maximum" wage is what he can get; but South Wales miners are proposing to introduce a definition of their own, and are supported in their efforts by Mr. D. Thomas, M.P., in no measured terms. There are doubtless many false points in their arguments, but they have to be coped with all the same, and it will be a good thing for the coal trade in South Wales when they are disposed of.

GOLD OUTPUT IN THE RAND.

THE output of gold from the Rand district during the past month, as cabled by the Witwatersrand Chamber of Mines, amounts to 204,228 oz. This total, however, is exclusive of the returns of several companies which, under the title of the "Association of Mines of the South African Republic," give their joint output as 47,301 oz. The month's production is, therefore, 251,529 oz., and shows an increase of 3,224 oz. as compared with the previous total, and an increase of 57,889 oz. as compared with the corresponding month of 1896. The following table gives the monthly returns since the beginning of 1894:—

1894. oz.	1895. oz.	1896. oz.	1897. oz.
149,814	177,463	148,178	209,832
151,870	169,295	167,018	211,000
165,372	184,945	173,952	232,067
168,745	186,323	176,707	235,698
169,773	194,580	195,008	248,305
168,162	200,941	193,640	261,529
167,953	199,453	203,873	—
174,977	203,573	213,418	—
176,707	194,764	202,561	—
173,378	192,652	199,889	—
175,304	195,218	201,113	—
182,104	178,428	206,517	—
2,024,159	2,277,635	2,281,874	1,388,431

THE FUTURE OF THE RUSSIAN OIL TRADE.

HOW ENGLISH CONSUMERS ARE AFFECTED.

SOME changes of great importance to this trade and also to the future supply of lamp oil to this country are pending in Russia owing to the fact that the Naphtha Oil Producers' League will close the first three trial years of its existence on October 1st prox. We referred recently to the rumoured amalgamation with the American interests, and we have often shown how detrimental such a combine would be to English consumers. The following gives a fuller conception of the feeling at Baku, the particulars having been gathered by the special correspondent of the London *Standard* resident in the district:—

The smaller dealers are trying to renew the League for a further ten years, while the great firms are endeavouring to secure modifications in several articles of the Union. The Standard Oil Company of America is watching impatiently the result of the discussions, and the end of the agreement, in order to renew its former action against the Russian oil trade. [This confirms our opinion on the rumoured combination, *vide* 527, p. 426. Ed. C.T.J.] It would, however, be regrettable if the selfish interests of a few firms were to prevail against the general development of the trade. The prosperous condition of the Baku industry has attracted the attention of English capitalists. One group has been established at Baku for some months, and is making large profits; another company is in negotiation with the oil dealer, M. Taighieff, to buy his various properties, naphtha wells, etc.; still another Belgian group is negotiating with the firm of Shibaieff Company to purchase for six million roubles its oil-producing mines. The Government does not throw difficulties in the way of granting permits of exploitation to foreign firms.

The largest exporters of oil to the Far East are the English firm of Samuel and Co., who have had with the Caspian Black Sea Company (Rothschild and Co.) a contract for ten years, beginning in the year 1892. The business of this firm is yearly extending. It now possesses thirteen large ocean steamers, reservoirs in fifteen different ports, from Bombay to Vladivostock, and great manufactories for making tin and wooden boxes. Last year this firm exported eleven million poods of

petroleum, of which 2¼ millions went to China, two millions to India, one million to Japan, and the remainder to other countries of the East. India is the principal consumer of Russian oil. Japan receives 20% of the oil exported, and China 28%.

The other export firms are—Nobel Bros. and Co., the Caspian Black Sea Co. (Rothschild), and Mantasheff and Co. Nobel Bros. and Co. many years ago established in Germany a company (Deutsch Russische Naphtha Import Ges.), to export Russian petroleum to the centre of Europe. But it proved a failure, owing to the Standard Oil Company, which has a strong footing in Germany. The same firm exports largely to the north of Europe, and has leased for that purpose the two steamers *Sviet* and *Loutch*, of the Russian Steamship Company. The Caspian Black Sea Company has a contract with Samuel and Co., and furnishes part of Turkey with oil, especially the Syrian ports. Its head agency, which is in Paris, controls all its export business. The third firm, Mantasheff and Co., has its own agents and steamers, and wholesale depôts at Salonica, Smyrna, Egypt, and formerly at Constantinople. Some years ago it exported about two million boxes, but last year, on account of the political troubles in the East, its export amounted to only one million boxes of petroleum. The success is due greatly to the absence of American competition in the Eastern seas. The Baku League has given great steadiness to the price of this constantly wavering article, and if its powers are renewed for ten years more, there is no doubt that it will enlarge the circle of its operations. It will have its own depôts, especially in Shanghai, Hong Kong, and various parts of China; it will construct great ocean steamers for the delivery of liquid oil; it will have, by means of Consular reports, exact information on the amount of oil consumed in various centres and ports of the world, particularly in the Far East. In case of necessity it will form, in foreign markets, different societies, composed of local firms, which, being in contact with the natives, can place Russian oil without difficulty. Thus the League hopes to open a new area of success to the oil industry. In the course of their meetings the League has come to the conclusion that the interior markets of Russia cannot consume its daily increasing production of oil, hence the necessity of searching for new foreign markets. Europe is inaccessible to Russian petroleum on account of the American competition. [If our flash point is raised to 100°, however, this market will be opened to our advantage. The Russian producers are willing now to send 90° oil at the present price if the Americans are made to send oil of the same quality.—Ed., C.T.J.] The League should find the means of getting rid of foreign exporters as contractors who take the lion's share of the profit. In order to remove such intermediaries, the League must apply directly to the principal ports of consumption. It must have Government assistance to gather the necessary information in different ports, and it must have on hand sufficient capital to attain this end. A Commission is to be formed, composed of members of the Finance Department and different oil producers, in order to study these various points. It remains to be seen what action will be taken by the principal firms, and what measures the Government will institute to protect this great industry. In two months the matter will have to be decided one way or another.

NICE FOR NORWAY.—The Standard Oil Company is extending its operations into Norway, and is lowering the prices there, with a view, it is said, of freezing out the independent Norwegian companies.

A "GASSING" FATALITY.—A labourer, named Squire Thomas Barlow, aged 34, of 35 Cateaton-street, Bury, was suffocated last week at the tar distilleries of the Bury Corporation Gasworks, at Elton. Barlow was clearing out a still which had been out of use for a couple of days, but owing to the gas he and another labourer were ordered out until the fumes cleared off. A quarter of an hour later he ventured in, and on reaching the bottom fell over on his back insensible, overcome by the fumes. He was promptly carried up to the open-air, and three medical gentlemen tried artificial respiration for over an hour, but without success, for the unfortunate man expired at 1.45 p. m. At the inquiry the jury returned a verdict of accidental death.

AMERICAN TRUSTS AND TARIFF CONSTRUCTION.—Anyone who has followed with care the proceedings in Congress at Washington and in the Committees of both Houses during the present extra session could furnish materials for a true picture of tariff construction which would be a ludicrous burlesque of the theory propounded in Protectionist campaign literature. Here is an example. At the behest of the Sugar Trust, a combination which controls the sugar-refining industry of the United States, the Senate has inserted in the Bill a substantial duty on imported refined sugar, which will enable this private company to levy for its own profit a tax upon every household in the country. It was admitted in the discussion upon this subject that the refining of sugar is carried on in the United States at less cost than in any other part of the world. According to the theory, therefore, no protection was needed. Yet it was conceded, because the private interest to be benefited at the public expense was powerful enough to gain over to its side a sufficient number of votes. But this case is only an illustration of the manner in which other parts of the tariff have been determined.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Smoke Consumers. T. Lowe. 15,383. June 28.
Purifying and Softening Water. W. J. Baker. 15,384. June 28.
Artificial Leather. A. J. Boulton. 15,404. June 28.
Explosives. H. Maxim. 15,499. June 29.
Producing Hydrogen Gas. L. V. Pratis and P. Marengo. 15,509. June 29.
Electrical Production of Peat Charcoal. C. A. Jensen. 15,513. June 29.
Carbonising Peat Lignite and Recovering Bye Products. M. Zeigler. 15,517. June 29.
Recovery of Gold, etc. T. G. Bowick. 15,569. June 30.
Paper Pulp from Peat. A. von Festzy. 15,601. June 30.
Extracting Gold from Solutions. T. R. Middleton and H. R. Gregory. 15,631. June 30.
Uninflammable Wood. E. M. Fox. 15,632. June 30.
Converting Peat into Coal. W. T. McGarry. 16,657. July 1.
Manufacture of White Lead. R. Matthews. 15,678. July 1.
Manufacture of Potassium and Soda. W. Muir. 15,700. July 1.
Fibrous Material suitable for making Paper from Peat. K. A. Zschöner. 15,797. July 2.
Producing Ozone. E. Andreoli. 15,813. July 2.
Apparatus for Inhaling Oxygen. F. W. Branson. 15,852. July 2.
Oil Press Plates. H. W. J. V. O. Bastiaans and H. Greenwood. 15,875. July 2.

ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

These abstracts are specially prepared for the Chemical Trade Journal, and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.

An Improved Method or Process and Apparatus for Removing Gaseous Iron Compounds from Water Gas. Dr. H. Strache, 14, Alserstrasse, Vienna IX., Austria. Eng. Pat., 16,984. July 31, 1896.

The presence of iron carbonyl in water gas causes incandescent mantles to deteriorate rapidly when this gas is mixed with coal gas, because this gaseous iron compound decomposes into iron oxide on burning. To avoid this the gas is passed through a sulphuric acid scrubber, a drawing of which is given. The gas enters at the bottom, and passes over pumice stone steeped in vitriol. The gas is dried in the lower layers, and the iron removed in the upper concentrated layers. The spent acid collects in the bottom of the scrubber. About 1.6 kilos of concentrated vitriol are required for 100 cubic metres of water gas.

Improvements in the Recovery of Gold and Silver from their Solutions. C. W. H. Göpper, Canalstrasse 46-48, Uhlenhorst, Hamburg, and H. L. Diehl, of Kl. Grassbrook, Vogelsteth 8, Hamburg. Eng. Pat., 17,493. Aug. 7, 1896.

The solution obtained by treating auriferous tailings with potassium cyanide in the usual way is treated with cuprous cyanide in excess, which forms, with the potassium cyanide present, soluble cuprous potassium cyanide. Sulphuric acid is then added, which decomposes the ingredients of the solution forming hydrocyanic acid and potassium sulphate, while gold and cuprous cyanides are precipitated. Caustic potash is added to the solution to fix the free hydrocyanic acid and form potassium cyanide, which is used over again.

Improvements in Extracting Sugar from Molasses by means of Barium Hydroxy-Sulphide, and Recovering the Same from the resulting Bye-products. W. Feld, Hönningen a/Rhein in den Silven. Eng. Pat., 16,009. July 20, 1896.

To make good the loss of sulphur occurring in the usual treatment with barium hydroxy-sulphide and its regeneration, potassium sulphate is added to the barium saccharate, precipitating barium sulphate, which is reduced with carbon to the sulphide and hydrated with water in the usual way. The solution from which the barium sulphate is separated contains alkali partly combined with sulphuretted hydrogen and sugar. It is treated with carbon dioxide, which drives off the hydrogen sulphide and forms an alkaline carbonate, which is recovered, while the sulphur loss is easily and simply compensated.

Manufacture of Sulphate Glass. K. W. R. Gaerisch, 5 Schützenplatz, Dresden. Eng. Pat., 14,901. July 6, 1896.

The use of carbon or stone coal tar is attended with many drawbacks in the usual preparation sulphate glass, particularly through the presence

of iron, which discolours the glass, and also the excessive wear and tear on the furnace owing to the formation of sulphurous acid. The use of animal and vegetable oils, resin, paraffin, &c., is suggested, which effect the same result, but are more thoroughly distributed through the melt, by reason of their lower melting points, while their high boiling points check undue volatilization. The sulphate is thus thoroughly reduced, and a whiter glass obtained.

The Treatment of Tin Oxide in the form of Powder, Sludge, or Paste, for the Smelting thereof. E. E. von de Linde, Uerdingerstrasse 114, Crefeld, Germany. Eng. Pat. 11,602. May 10, 1897.

Tin oxide recovered as a bye-product in one of the above forms could formerly only be smelted in a blast furnace with great loss. By the present process the oxide is mixed with tin slags, caustic lime, and alkali, or their carbonated compounds, pressed into briquettes, dried and smelted in the usual way. It is suggested that to every 100 parts of tin oxide about 10 of slag, 8 of lime, and 2.5 of alkali be added.

THE CRITICAL POSITION OF SODIUM NITRATE.

NOT A MERE PASSING EVENT.

AT the recent opening of the Chilean Congress, the President presented a very important message—accompanied by a project for a new law—on the subject of the serious depression in the nitrate industry. As the nitrate trade is a matter of great moment to a large number of English investors, a summary of the President's opinions cannot fail to be of interest.

"The nitrate industry" said the President, "is experiencing a crisis which demands the attention of the State both on account of the importance of the industry itself and its effect on the national revenue. The Government, impressed by the gravity of the situation, has endeavoured to study the origin of the crisis and the best means of combating it, and has formed the opinion that the present is not a crisis of a passing nature, such as have occurred before, but is of a graver nature, arising from excess of production combined with the increasingly active competition of sulphate of ammonia, of which the production is increasing with wonderful rapidity."

"In 1889 the price of nitrate was 8s. 4½d. per quintal; in 1890 it fell to 7s. 7½d.; in 1891 it rose to 9s. 1½d.; in 1895 it fell again to 7s. 7½d.; in 1896 it was 7s. 10½d., and in the present year it has fallen 7s. 6d. per quintal. The fall in the price of nitrate is not in itself an evil; on the contrary, it stimulates consumption and checks the competition of rival manures. A high price coupled with a brisk demand would have invited competition from cheaper substitutes."

"Although the fall in the price of nitrate has been considerable, various factors have combined to lessen its effects (to the producers)—viz., an improved system of preparation and cheaper freights both by rail and by sea—and until recently the increased sales have set off the reduced prices, and the stock in Europe did not exceed 3,000,000 quintals or 4,000,000 quintals. Lately this equilibrium has been disturbed, and the stock in Europe has doubled. The falling away in price has latterly been more rapid, and threatens to swallow up the margin of profit to the producers. If this comes to pass the least favoured nitrate grounds will be thrown out of production, to be followed by others but little better off, thus causing a diminution, if only temporary, in the total production. If some of the nitrate grounds cease to be worked they will lose all or part of their value, and the national revenue will suffer in proportion."

"While a slow cheapening in the price of nitrate might be advantageous both to the producers and to the country, if the fall is too rapid it means the ruin of the producers. The alarming fall in nitrate is of complicated origin, but is principally due to the competition of sulphate of ammonia and other manures, and to excess of supply to demand. It is probable that sulphate of ammonia could compete with nitrate even at a lower level of prices, so that to lower the duties levied on nitrate would only be to the benefit of the consumers of nitrate. The sale of sulphate of ammonia has been pushed in the United States and elsewhere, while nitrate producers have up to the present done comparatively little in the way of advertisement, &c. The remedy seems to be to push actively the sale of nitrate in countries where it is already used, and to introduce it into new countries, and to find fresh fields for the employment of nitrate. The State is even more interested than the producers in extending the use of nitrate."

PROPOSED NEW LAW.

The following law is proposed:—Article 1. To employ 1 per cent. of the nitrate duties in advertising and making known the uses of nitrate. Article 2.—To authorise the President to employ, say, £26,000. a year for the said purpose, of which £14,000. shall be spent through the Nitrate Committee and the remainder by the Government directly.—*Financial News.*

Legal Intelligence.

BOW COUNTY COURT.

(Before His Honour Judge French, Q.C.)

CARPENTER v. COMMERCIAL GAS CO.

This was a prosecution under the Alkali Acts in the form of a summons taken out by Mr. R. Forbes Carpenter, the Chief Inspector under the Alkali, &c., Works Regulation Acts, 1881 and 1892, against the Commercial Gas Company, under section 9 of the first-named Act, which requires that owners of works shall use the best practicable means to prevent the discharge of noxious gases into the atmosphere.

Mr. Ferguson and Mr. Colefax appeared for the plaintiff; Mr. Hume Williams represented the defendants.

Mr. Ferguson, in opening the case, said the action was brought under the provisions of the Alkali, &c., Works Regulation Acts, 1881 and 1892. Section 9 of the Act of 1881 provided as follows: "The owner of any works specified in the schedule to this Act shall use the best practicable means for preventing the discharge into the atmosphere of all noxious gases and of all offensive gases evolved in such works, or for rendering such gases harmless and inoffensive when discharged, subject to the qualification, in the case of sulphuric acid works, that no objection shall be taken under this section by an inspector to any discharge of gas by a chimney or flue on the basis of the amount of acid gas per cubic foot of air, smoke, or gases, where that amount does not exceed the amount limited by the last preceding section." By that section, it was provided that "every sulphuric acid works shall be carried on in such manner as to secure the condensation of the acid gases of sulphur and nitrogen evolved in the process of manufacture of sulphuric acid to such an extent that the total acidity of such gases in each cubic foot of air, smoke, or gases escaping into the chimney or into the atmosphere does not exceed what is equivalent to 4 grains of sulphuric anhydride." For failure to use such means, owners of works were liable to a fine of £20. for a first offence, and £50. for subsequent offences, with £5. per day during continuance. By section 22, the fines were recoverable in the County Court. Provision was also made in the Act that proceedings should not be commenced without the authority of the Local Government Board. This had been given under the seal of the Department, and signed by the President. The prescribed 21-days' notice had also been served on the owners, stating the facts on which the Inspector founded his opinion as to the means which the manufacturers had failed to use. The offence charged against the Commercial Gas Company was twofold—first, that they had not used the "best practicable means" of preventing the escape of noxious gases; and secondly, that they had allowed such gases to escape into the air. To show how the case arose, a slight outline of the course of manufacture must be given. In the distillation of coal for the manufacture of gas, certain impurities of a tarry and watery nature were given off, forming what was called gas liquor—an evil-smelling stuff containing large quantities of ammonia and other substances. This liquor was used in the manufacture of ammoniacal compounds, obtained by the distillation of the crude liquor. After the free ammonia has been distilled off, the residue was treated with caustic lime in boilers, and a second distillation took place. The lime decomposed the ammoniacal compounds, and drove off the volatile gases. These passed into a tank or saturator, wherein the ammonia was absorbed by sulphuric acid, and a very noxious gas—sulphuretted hydrogen—was left. How this foul gas was to be disposed of was the next question. Before 1880, the almost universal practice had been to burn it. But then a further chemical change occurred; the sulphur forming another compound—sulphurous acid—a noxious, deleterious gas. Therefore, when the gas companies were getting rid of sulphuretted hydrogen by the crude method of burning, the result was they were merely discharging into the air a little less noxious gas than before. Between 1880 and 1890 chemical knowledge advanced considerably, and fresh methods of dealing with these gases were discovered; and one of the Inspector's duties was to see that, in works where offensive trades were carried on, the best practicable means of preventing nuisance and danger to health were adopted. Under these circumstances, the previous Inspector under the Acts—Mr. A. E. Fletcher—informed the Commercial Gas Company that it was time a better system than that of burning the sulphuretted hydrogen was followed at their works. By a letter dated June 19, 1894, he told them that this was no longer the best practicable means of dealing with it; and he mentioned others—treatment by oxide of iron, and recovery of the sulphur by the Claus process. A choice of several systems was given them by Mr. Fletcher, who in his letters described them in detail. Expert witnesses would, of course, be called to explain the methods of carrying them out.

Mr. R. Forbes Carpenter, F.I.C., examined by Mr. Ferguson, said he was Chief Inspector under the Alkali Acts; having succeeded the former Chief Inspector on June 1, 1895. He had previously been for thirteen years one of the District Inspectors under the Act. He was

acquainted with the working of the Claus sulphur-recovery process, with that for the conversion of sulphuretted hydrogen into sulphuric acid, and also with the scrubbing and washing process. The three processes he recommended in his notice to the Company were practical methods of getting rid of the nuisance of foul gases arising from the manufacture of sulphate of ammonia. They were the best commercial methods known. The scrubbers were only in limited use, on account of the expense. Most works dealt with the gases by the other two methods. Burning was not, in his experience, the best method of dealing with the sulphuretted hydrogen, because it involved the discharge of sulphurous acid into the atmosphere. Such emanations were deleterious. The acid produced picked up moisture and oxygen from the atmosphere, and became sulphuric acid. Both sulphurous and sulphuric acid were soluble to a certain extent. Sulphurous acid gas was twice as heavy as air, and sulphuric acid was still heavier. Whether sulphurous acid discharged from a high chimney would diffuse upwards rapidly depended upon the state of the atmosphere. Under some conditions, it would traverse the air like a stream, without being much diffused.

Professor Haldane, F.R.S., examined by Mr. Colefax, said he was Lecturer on Physiology in the University of Oxford, and a member of the Board of Trade Committee on the Ventilation of Towns. In this capacity, he had specially to investigate the effects of sulphurous acid formed in the combustion of coal. Apart from that, he had given particular attention to the effects upon human beings of noxious gases in the atmosphere. Sulphuretted hydrogen, sulphurous acid gas, and sulphuric acid in the air were certainly poisonous, even when considerably diluted. In the proportion of 4.25 grains per cubic foot discharged from a factory chimney, the effect would be dangerous to man, and would probably produce death in a short time, if constantly breathed. To some persons, 4 grains of sulphur dioxide in 500 parts would be dangerous. The extreme amount generally permitted was 4.3 grains. This would be about 1 part in 350 parts. Breathing this mixture would prove fatal to man in a few minutes, judging by the effects upon animals—that was, the full strength of it. Further dilution by mixture with 100 parts would produce violent sneezing, coughing, and irritation of the throat passages and lungs. People would be very glad to get out of such an atmosphere. Gases evolved from chimneys had not the same chance of dilution in foggy as in fine weather. Carbonic acid gas was not diluted to more than 100 parts. This was the average dilution of these gases. With whatever dilution they were likely to receive, breathing the air would still produce coughing and choking. Both sulphurous acid and oil of vitriol (sulphuric acid) were exceedingly irritant.

Professor Ramsay, F.R.S., examined by Mr. Colefax, said he had for many years taken great interest in the subject of air pollution. The emission of 4¼ grains of sulphuric acid per cubic foot would make the air irritating, and exceedingly disagreeable to breathe; and it would blast trees near the works, particularly on the north and north-east sides, according to the prevailing winds in this country. The diffusion and dilution of the gases escaping from the defendants' chimney would depend upon the weather. Sometimes they would not be carried very far, and at others the lines of smoke would travel for rather long distances. During fogs they would be deposited on the ground in an undiluted state.

Mr. Hume Williams said that ever since 1894 the Department had been calling for these various processes to be worked by the Company; but, though they considered their own process equally effective, they thought they would, as a large Company, be very foolish if they were to be perpetually quarrelling with the District Inspectors. So at last, rather than have this continual worry and trouble with them, they said they would carry out the work at a cost of £5,000., of which they had, as he had said, already expended £3,000. It was commenced in December last, and would be finished in the autumn. The latter part of the work was being done under contract; but the first portion was very difficult, having to be executed in a swampy district, and the Company had done it themselves. It would be completed in about two months; but the Local Government Board had, notwithstanding, thought fit to issue this summons against them.

His Honour remarked that, judging by the correspondence which had gone on since 1894, he could not say there had been undue haste on the part of the Department. They were bound by the Act of Parliament, and their Inspector's duty was to see that it was complied with. As far as he could see at present, this litigation did not promise to be very fruitful; and in the event of future proceedings being taken, the Company would still have their right reserved to contend that their own system was the best, though they were in fact complying with the requisition. If they were honestly trying to do this—if that was really their intention—the Department could ask for no more. The best course would be for three months' further grace to be given them, and see what was done by that time. If necessary, the case could then be brought on again. This, of course, was subject to anything Mr. Ferguson might say.

After some further discussion, his Honour said the Chief Inspector

was willing to allow three months for completing the permanent works, which would give a profitable money return. This was a matter for consideration, of course. On the admitted facts, the Company were doing what they reasonably could to obey the Chief Inspector's directions, and he should hold that this was a compliance with section 9 of the Act. He also pointed out that the Department would have the precedent, in any other cases, that one of the most powerful gas companies in London had yielded to their demands. If both parties wished him to go on with the hearing, he would do so; but his present view, on the facts, was that if the Company actually began in December last, and were now carrying out, works which would be the best practicable means of preventing the nuisance, the only way to deal with the case was to adjourn it, to enable the works to be completed.

Eventually, after a hearing extending over two days, the case was adjourned for four months.

SALFORD SEWAGE SCHEME.

ARTIFICIAL FILTRATION TO BE ADOPTED.

A special meeting of the Salford Council was held on Monday in the Town Hall, Bexley-square, for the purpose of considering the report of the River Irwell Conservancy Committee as to the scheme for the disposal of the sewage of the borough. Sir Richard Mottram, the mayor, presided.

The committee in their report recommended that the Council should pass the following resolutions:—1. "To borrow £50,000 on the credit of the land, works, or other property of the Corporation used for the purposes of disposal of sewage, and direct the requisite steps to be taken with that object. 2. To authorise your committee to proceed forthwith with the scheme of the borough engineer already adopted by the Council, for the purification of the sewage and the necessary works incidental thereto. 3. To direct the original application to the Local Government Board to be withdrawn."

Alderman Walmsley, chairman of the River Irwell Conservancy Committee, moved that in pursuance of the recommendation of the committee, the Council should authorise the borrowing of £80,000, for the purposes of sewage disposal. He said he took the same ground now that he did in December, 1895, namely, he did approve of the principle of the scheme of sewage purification which the borough engineer had submitted, but he wished to warn the Council that there was a possibility of incurring expenditure that they ought carefully to consider. The £50,000, which the committee recommended they should borrow would not cover the whole of what would be necessary, and therefore he urged that they should borrow £80,000. They would not have the opposition of the Mersey and Irwell Joint Committee to this scheme, because the committee had not the power to hinder them. He urged that the £80,000, should be borrowed, because in his opinion it was time to cease tinkering. Whatever might be said of Salford, he said the borough deserved praise on account of its attempts to solve the problem of sewage disposal.

Mr. C. S. Madan seconded the resolution. In his opinion the system of sewage disposal which they had adopted was the most perfect that had hitherto been devised. Any extensions that would be necessary in the future would consist entirely of additions on previous lines. The land they had available now would amply provide sufficient filtering area for a number of years to come.

Alderman Bowes, supporting the resolution, said that the leading chemists were coming round to the view that a scheme of artificial filtration could be made successful. The Council would see how necessary it was that they should come to a decision at once in view of another impending appearance before Judge Parry.

Alderman Jenkins spoke to the same effect.

Dr. Quine remarked that the resolution suggested two things—one was to borrow money in an unusual way, and the other was that they should spend money in putting down ten acres of filters at the sewage works. The proposal, in his opinion, was to borrow the money in a manner which suggested that they were getting behind the back of the Local Government Board, and he moved as an amendment "That this Council does not approve of the method of borrowing money suggested by the Rivers Committee, and that the matter be referred back to the Committee with a view to their presenting a scheme on the lines suggested by the Local Government Board."—Mr. G. H. B. Wheeler seconded the amendment.

In reply to a question the Mayor said that the recommendation of the Committee that the money should be borrowed was practically unanimous, and stated that the money would be borrowed strictly in accordance with the law of the land.

After other members had been heard a vote was taken. The amendment was lost. The resolution was then put and carried, 18 voting for and 10 against.

Selected Correspondence.

THE SEWAGE DEADLOCK.

(To the Editor of the Manchester City News.)

SIR,—Within the past few days the interminable sewage question has been forced upon the attention of the public. At the County Court, before Judge Parry, the problem took a somewhat practical turn, and the question so often applied by magistrates to incorrigibles, "What is the use of fining such people?" was put with much force by his Honour. To fine them, he said, is only taking out of one pocket and putting it into another, and a more effective alternative was brought within the range of practical punishment. His Honour suggested that he might order someone to do the work required, and thereby at once force compliance with law as embodied in the Rivers Pollution Act. Another chance has been given to the Royal Borough to amend its ways and give up trying to be a law unto itself. Will it avail itself of the opportunity?

Corporations, like individuals, must obey the law, and it would ill become those responsible if, within a few days of having had distinctive honours conferred upon its chief magistrate, it should revolt against the authority. Its administrators cannot expect to be longer allowed to pollute the Ship Canal. It is a fact admitted by its chief officials that on each and every day throughout the year, at least one hundred tons of solids are poured into the Canal. While this is so, the duty of the Committee representing both borough and city is to do their very best to purify their sewage, and compel all other authorities to do the same.

Salford has for a long time been restricting its effort to precipitate and purify to the meagre outlay of 16s. per million gallons. Manchester has been expending 54s., yet the result in both cases, according to the report of analysis, is a "bad effluent." Manchester only differs from Salford in its readiness to spend money. With the one, saving of money is the first motive, the other has apparently adopted as its motto "Money is no object." Why is it then, that, with all this liberality of spending, we have a result so bad? What is the money being continually spent upon? No one will suggest that the report of analysis is wrong, because the gentleman who makes it is also our professional adviser. No one will suggest that the Joint Committee is unfair to us or harsh in its dealings, because its vice-chairman is also the chairman of our Rivers Committee, and our vice-chairman is also a member of the Joint Committee. Alderman Thompson, at the last meeting of the Joint Committee, said "that the Local Government Board should not ask them to do impossibilities." This is just what both he and Professor Roscoe have been voluntarily trying to do for some years, and a first step towards performing the possible is to stop trying the impossible. These two gentlemen have all along been our advisers. The one has recommended and the other has approved and spent the money. No one will dispute the service done. They have recommended well and spent excellently. The public are now looking for results, and the Joint Committee forms the court of trial. But here our chief spender is a judge and our adviser, to whom we have paid thousands of pounds, is a witness against us, and they each tell us now that our expenditure is no good.

There is no hope in precipitation, and no chance in chemistry, and their cry is "to the culvert." Was there ever a greater farce or more flagrant anomaly? How long will the City Council permit its members to pretend to serve two masters. Alderman Thompson is chairman of the Rivers Committee, and is vice-chairman of the Joint Committee. He is also a director of the Ship Canal Company. He cannot act for them all faithfully. Professor Roscoe is salaried adviser to both. It is his duty in one capacity to condemn his own acts done in the other. The first thing needed is for both to resign from the Corporation employment, and as they have admitted their work to be a failure and condemned it the severance will not be painful. This done an opportunity will be given to the City Council to reconstruct the Rivers Committee and appoint persons to do the work who will give personal attention to it, and who will not allow themselves to be run into useless expenditure at the suggestion of any official.

At the present time advertisements appear for tanks at Davyhulme, which are wholly unnecessary. An army of excavators and other tradesmen are employed on these works, trenching and laying pipes, which could have been done without, and building a large pit for the deposit of sludge in the middle of the purification plant, all of which is worse than labour lost. No member of the committee knows anything about these matters, and the entire business is in the hands of an official who has already too much work, and is forced to employ irresponsible deputies. The effluent is bad, and there is little wonder. If one walks round the settling tanks, they will see thousands of gas bubbles breaking through the surface of the effluent. This is caused by the sludge lying too long at the bottom of the tanks. The quick and frequent removal of the sludge ought to be secured, and until this is done it is folly to expect a better effluent.—Yours, &c.,

JAMES PICKERING.

Old Trafford.

SOCIETY OF CHEMICAL INDUSTRY.

ANNUAL MEETING.

Wednesday, July 14.—The annual gathering of this Society was opened under favourable conditions in Manchester, on Wednesday, at Owen's College, under the presidency of Dr. Schunck, F.R.S. Letters of apology were read from Mr. E. Rider Cook, Sir R. Pullar, Sir H. E. Roscoe, Dr. Messel, and Mr. David Howard. There was an influential gathering of members, numbering about 120. The Secretary (Mr. C. G. Cresswell) read the

REPORT OF THE COUNCIL,

which ran as follows:—

"We have the honour to report that the number of members on the register is 3,037, as compared with 2,971 at the last annual meeting. During the year, 226 new members have been elected, as compared with 237 last year, while the loss has been 162, as compared with 161 last year. Among the latter are 23 deaths:—J. M. T. Anderson, J. Ascoug, R. W. Peregrine Birch, Jos. Cunliffe, H. E. Dee, L. Demuth, R. Fulton, A. Goskirk, Josiah Hardman, Dr. Sydney J. Harris, Peter Hart, Dr. H. Kunheim, W. Martyn, A. H. Mason, Frank Mead, John Molineux, W. A. Rowell, Fred. Scott, T. Shimidzu, A. J. Tyrer, G. M. P. Vary, Alex. Walker, and Jos. D. Weeks.

"During the past session, 104 papers have appeared in the Journal, as compared with 92 last year. The excess of revenue over expenditure, as may be seen from the Treasurer's statement in the last number of the Journal, amounted last year to £1,011. 3s. 11d., as against £162. 3s. the year before.

"This large difference is accounted for by the fact that various economies, mentioned in the last report, have been effected during the year. There has been a reduction in most of the items of expenditure, the principal saving being in Journal expenses, both publishing and editorial. The increase in the receipts is very largely due to subscriptions to the Collective Index, which will, of course, be wanted when the index is published, so that there will not be anything like such a large balance of revenue over expenditure at the end of the present year.

"The production of the Collective Index has involved more labour than was anticipated. Experience gained during the progress of the work has necessitated partial re-casting, to the great improvement of the index as an aid to research. The Council feels confident that on completion the delay in the production of the work will be justified.

"The following Chairman of Sections retire this year:—Dr. John Clark (Scotland) and Mr. F. J. R. Carulla (Nottingham), and are succeeded by Mr. George Beilby and Mr. Jas. O'Sullivan. Mr. H. R. Proctor retires from the secretaryship of the Yorkshire Section. His successor is not yet appointed. The Council acknowledges the debt of the Society to these gentlemen for their efforts on its behalf.

"In the session of 1896 a committee of Parliament reported in favour of some amendment of the law in relation to the adulteration of food and drugs. In view of promised legislation, the Council appointed a committee to take such action at the proper time as might be found necessary to secure the Society's representation upon the Board of Reference proposed to be created by Parliament.

"In October last a special committee was appointed to co-operate with the London Chamber of Commerce and other bodies in making inquiries as to what further concessions by the authorities in regard to the use of spirit were required in the interests of British manufactures. Several meetings of the joint committee were held, and eventually a conference took place with the officials of the Excise Department of the Inland Revenue, which it is hoped will have satisfactory results."

Drs. F. Hurter and Gustave Schack-Sommer having moved and seconded the adoption of the Report, Dr. Stevenson Macadam rose to request the Council to consider the desirability of regulating the election and rotation of members of the Publication Committee on the same lines as the Council elections. He thought new blood was desirable, and pointed out that 9 out of the 30 members had been on 15 years, and a much larger percentage had remained during the last 6 years. Mr. Powell seconded the recommendation. Mr. Tyrer, in answer went fully into the work of the Committee and also the question of the editorial expenses having risen from 15s. a page to 25s., to which Dr. Macadam had referred. On his statement that the Council would consider the matter, Dr. Macadam did not press his recommendation, and the report was adopted.

An abstract of the Hon. Treasurer's Report showed that owing to the economies advised by Prof. Thorpe at the Leeds meeting, and carried out under the presidency of Mr. Thos. Tyrer, there had been an increase in the receipts of £478 and a decrease in the expenditure of £370, making in all a net saving of £848. On the motion of Mr. T. Fairley, seconded by Mr. H. Brunner, the Treasurer's Report was adopted.

PRESIDENT'S ADDRESS.

At a quarter to twelve the President arose to deliver his address. He said: Some years ago a meeting was held within the walls of the building in which we are now assembled for the purpose of forming a society for the promotion of technical as distinguished from scientific

chemistry. The Society was then founded, and its general scope and object were defined; the name it now bears, that of the Society of Chemical Industry, being at the same time given it. I was present at that meeting, and made a little speech in favour of its object. I may therefore be considered in a sense one of the founders of the Society.

In taking such a retrospect, one thing, I think, must strike everyone; that is, the high tone assumed by the Society and reflected in its Journal, the entire devotion to the objects for which it was established, the total absence of laudatory or depreciatory criticism as regards new inventions, the intentions so conspicuously shown of only imparting useful information on chemico-technological subjects.

The delivery of an address by the President on this occasion being a *sine quid non*, the question arose with me as to what the subject should be, I might imitate the example of some of my most distinguished predecessors, who have all given us, in the form of addresses, valuable and exhaustive treatises on the subjects with which they were specially familiar. I would willingly have done the same, but, alas, the speciality which I may or might have called my own—the chemistry of organic colouring matters—has sailed away far out of my reach and ken.

Instead, therefore, of giving you an elaborate disquisition on any particular subject, I shall rather endeavour to divert you by referring in the first place to some forgotten or half forgotten facts connected with the history of chemical technology in the Manchester district during the first half of this century, more especially in connection with the personalities of the men to whom we owe so much in this branch of industry. I shall, in the next place, refer shortly to a few organic colouring matters, about which I think I know as much as most men, on which will follow a few remarks on the theory of dyeing as regards cotton, and some general observations on the dyestuffs of modern times as compared with those formerly employed; and lastly, some views and opinions on some subjects on which I have thought, but which I do not profess to have studied in a manner such as their importance would demand.

THE HISTORY OF CHEMICAL INDUSTRY IN MANCHESTER.

I begin with John Dalton. I suppose there is no one here present but myself, and very few persons still living, who were personally acquainted with this great man. On my mind his image is so indelibly impressed that, were I a portrait painter, I think I could trace out his lineaments to the finest feature; though this might not be very difficult, since the expression of his face, though fine, was remarkably passionless. Dalton lived with the master of the school that I attended, and I had frequent opportunities of seeing and wondering at his ways. His laboratory was a room the dimensions of which did not exceed 20 ft. by 15; here all his great discoveries were made. I was often puzzled in after years to know how, in the contracted room he used for his laboratory, and which still exists, though used for other purposes, he could make those world-wide discoveries on which his fame depends. The answer to the puzzle was, however, simple enough: it was the mind that made the discoveries, not the place. I mention Dalton first and foremost, not so much on account of his great chemical discoveries, but because he was, in his day, the universal referee in all matters connected with technical chemistry. He was on intimate terms of friendship with Thomas Hoyle, the eminent calico-printer, of Manchester, also a Quaker.

A very eminent family connected with chemical industry flourished in Manchester at the same time as Dalton. I allude to the Henry family. Of this family three generations successively distinguished themselves. The first member of any note was Thomas Henry, a gentleman, it is understood, of Irish extraction. He was the first to prepare the so-called "Henry's Magnesia"—a compound, the virtues of which the discoverer, or rather the preparer, entertained somewhat exaggerated conceptions, going a little beyond what its merit as a useful medicine justified. The distinctive merit of Henry's magnesia, I have always understood, consisted in this, that when stirred up in water it formed a soft, milk-like emulsion in which no grittiness was perceptible, and which gave no deposit, even on long standing; and this property, I have been told, was due to precipitation with potassium carbonate in the place of sodium carbonate, and to using the solution of magnesia in a very concentrated state—a proof, if correct, of how often success in manufacturing manipulation depends on minute details. A favourite practical joke in Mr. Henry's works was to ask a lady visitor to lift up a huge block of magnesia, weighing apparently a hundredweight; she, exerting herself to her utmost, would be surprised to find that it could be lifted like a bundle of feathers. In addition to magnesia, Mr. Henry manufactured aromatic vinegar. He was succeeded by his son William Henry, who had enjoyed the advantages of a university education, but continued nevertheless to carry on the business of a manufacturing chemist. William Henry took a great interest in theoretical chemistry, and was the author of a work entitled "The Elements of Experimental Chemistry," which ran through several editions and had much vogue in its day.

The President here contrasted the laboratories of then, as described by Henry, with those of to-day.

To Dr. William Henry is sometimes given the credit of the invention of aerated waters. There is some doubt about this, but if correct, he must be numbered among the benefactors of mankind, as having added largely to its innocent gustatory pleasures. A third generation of this remarkable and highly-gifted family were represented by Dr. William Charles, son of Dr. William Henry. I have good reason to remember Dr. Charles Henry, for, he hearing that I was learning chemistry entirely from books, very kindly offered to give me some practical instruction in science, and I was accordingly introduced into the laboratory attached to his works—a somewhat dark and dingy apartment, but a paradise to me who had never seen its like before—and taught the rudiments of analysis. Dr. Charles Henry was a favourite pupil of Dr. Dalton, who bequeathed to him the whole of his scientific apparatus. This was afterwards given to the Literary and Philosophical Society, in whose rooms it is still to be seen. He also wrote a life of Dalton, a classic production forming one of the most important volumes of the Cavendish Society's series.

An eminent contemporary of the Henrys and belonging to the same class, *i.e.*, men distinguished not only for skill as manufacturers, but also for general culture and taste, was James Thomson, of Primrose, near Clitheroe, head of the firm of calico-printers called after him. The history of calico-printing in this country has still to be written, but when it is written the name of James Thomson will occupy a conspicuous position in it. He will always be remembered as the inventor of the process for discharging Turkey-red by printing tartaric acid on the cloth then passing it through a solution of bleaching powder—a process which, I believe, is still in operation. This process was a great improvement upon the pressplate printing as carried out in Scotland and brought to perfection by Monteith, of Glasgow, in 1818.

The name I have now to mention is that of a man of a type differing widely from that of James Thomson and the Henrys. It is that of John Mercer, probably the greatest genius who ever applied himself to the improvement of calico printing. Born in the humblest circumstances, and without even the rudiments of learning, he taught himself all he required, from reading to music, mathematics, and chemistry, and by his industry and ingenuity raised himself gradually from the position of a handloom weaver to that of a partner in an important calico printing firm. Among the inventions due to Mercer, the following may be held to be the most important:—The application of the orange-coloured sulphide of antimony and the brown oxide of manganese in calico printing, his improvements in Turkey-red dyeing, the successful attempts to replace the cowdung previously used in calico printing by substitutes such as sodium phosphate or arseniate, and last, though not least, the invention of a process, now called "mercerising," whereby the properties of cotton fibre, both chemical and physical, are modified in a remarkable manner.

He paid attention to so-called catalysis, to the composition of bleaching powder, and to the relations between the atomic weights of the elements. On the last-named subject he was probably the first to put forth more or less speculative opinions, such as were subsequently developed by Newlands, Mendeleef, and others.

The next name I have to mention is that of Mr. John Dale. In the transition period through which chemical technology then passed Mr. Dale bore a conspicuous part. A native of Birmingham he came to Manchester early, and became a pupil of John Dalton. The manufacture of oxalic acid by fusion of sawdust with caustic alkali in accordance with Gay-Lussac's invention was one of the first processes carried out practically by Dale. Then followed improvements in the manufacture of mauve, the preparation of Manchester Brown, and Manchester Yellow, after which came the manufacture of aurin, the theory of which was worked out by the late lamented Professor Schorlemmer in conjunction with Mr. Dale's son. Here the President, who is 75 years of age, transferred the reading of the address to Mr. Tyrer who, continuing, said: In this place I might mention the name of Mr. Peter Hart—a valued member of our Society quite recently deceased. He was for many years connected with the firm of Tennant, Clow and Co. They manufactured salts of tin, sulphates of copper and zinc, nitrates of lead and iron, sodium arseniate, and sulphate of indigo. Mr. James Young, afterwards celebrated for his inventions in connection with the mineral oil industry, was for nine years with Messrs. Tennant, Clow and Co., and introduced the manufacture of red prussiate of potash. The chief part of Mr. Young's career was, however, spent in Scotland.

Reference was next made to Mr. E. Sonstadt, who, associated with Mr. Walter Weldon, devised an ingenious process of distilling magnesium. In due course works were erected in Salford and the manufacture of magnesium commenced on a large scale, conducted under the care of Mr. Samuel Mellor, who has been associated with them ever since. The manipulation of magnesium was attended by many difficulties, but after many trials and experiments Mr. W. Mather, of the Salford Iron Works, devised a highly ingenious machine for forcing it into wire of any thickness or fineness. This machine has never been superseded and remains to this day a specimen of the inventor's great mechanical ability.

The history of the discovery of vanadium in this district is one of peculiar interest. Some 25 years ago in the neighbourhood of Mottram and Alderley, some mineral deposits were found containing copper, cobalt, and other metals; and works were erected there for obtaining these metals, under the care of Dr. Gerland, who obtained a blue liquid, from which no copper was precipitated by zinc. On examination, the blue colour was found to be due to some compound of vanadium. With the assistance of Mr. Mellor, of the Magnesium Metal Co., this was worked up, and brought into a state of comparative purity. With this material to work on, Sir Henry Roscoe was enabled to carry out his classic researches on vanadium and its compounds. I also proved of great use in the hands of Mr. John Lightfoot, who was then engaged in the investigation of aniline black, and who found vanadic acid to be far the best agent to use for the production of that dye. The material thus obtained was sufficient to supply all the vanadium salts used in commerce for a number of years.

I come now to the second division of my address, referring to—

ORGANIC COLOURING MATTERS.

Of these it is principally the natural colouring matters, *i.e.*, those occurring in nature, that I shall allude to. I will begin with chlorophyll. Chlorophyll, so called, is used, I believe, as a means of imparting a green colour to a particular class of soaps, but why a green colour should be used in this case, and why any other green pigment should not answer as well, I cannot understand. It is, however, not chlorophyll at all, being a mixture of fat with some derivative of chlorophyll. How these substances are applied in soap-making, I have never been able to ascertain. It may be asked whether chlorophyll might not be employed for dyeing fabrics. I have myself made some considerable experiments in this direction, but without any conspicuous success.

THE COLOURING OF PICKLES.

Much discussion has of late arisen as regards the real or supposed injurious consequences of imparting to pickles and other articles of food the much admired vivid green colour so often seen in them. I think that the small quantity of copper contained in a green pickle or vegetable cannot be very injurious. The mischief, however, consists in this, that the pickling vinegar containing usually an excess of copper salt is allowed to stand in contact with the pickles and may be consumed to some extent with the latter. If the vinegar is poured off and the vegetable washed with water, which is also poured off before adding fresh vinegar, then I feel convinced any quantity of the product may be eaten with impunity. An eminent physiological chemist, Prof. Tschirch of Berne, who has undertaken an exhaustive examination of the subject, has arrived at a similar conclusion.

For the information of those to whom this view of the matter is not acceptable, and who still feel anxious about copper in food, I may say that all pickles—that is, pickled vegetables—that show a grass-green colour, however slight, certainly contain copper. Pickles prepared with vinegar only are always and without exception olive-green. For my part I quite fail to understand the pleasure and satisfaction derived from the eating of a bright green article of food. Should a substitute be required for the copper salts hitherto employed in cooking, which shall be both bright and innocuous, I think it might easily be found among the numerous green colouring matters of artificial origin now occurring in commerce.

There is another subject connected with the chemistry of plants with which I am tolerably familiar, and on which I wish to say a few words, seeing that it is not, generally speaking, well understood; it is the nature of the process whereby the well-known blue colouring matter, indigo, is formed in and obtained from the tissues of certain plants.

An ingenious Frenchman professes to have discovered that the process of formation of indigo in the watery extract of indigoferous plants is one of fermentation, and that it is the presence of a certain bacterium that is the immediate cause of decomposition. In former days it was electricity that was called in to explain anything we did not understand, now-a-days it is fermentation and a bacterium or bacteria. By a series of well-conducted experiments carried on in the indigo manufactories of India, Mr. Bridges-Lee has proved that there is no particular indigo-producing process of fermentation whatever.

Indigo-blue, as all chemists know, has been produced artificially by Baeyer and others. There is one improvement, or rather modification, of the process of manufacture for a special purpose which I would suggest. I have shown that indigo-red, or indirubin, may be produced in much larger quantities than usual by modifying the process whereby the indican of the plant is decomposed. Would it not be possible to produce in India a real red indigo, a product which I am told would be of value?

The President next dealt at some length with artificial alazarine and modern colouring matters, adding that the most useful of all the artificial colouring matters, both as regards variety of tint and other properties, are the azo colouring matters.

FOOD ADULTERATION AND IMPURITIES IN WATER AND AIR.

After saying that as regarded adulteration of articles of food, there had been a considerable decrease of the practice in the district during recent years, Dr. Schunck said that although their water supply in Manchester and Salford was excellent, they were surrounded with difficulties almost insurmountable in dealing with their sewage and waste water of all kinds. All attempts to remedy the objectionable qualities of the effluent water to the canal and river had been more or less in vain; but perhaps there was someone present who, by an inspiration of genius, might see at once, by a sail on the canal, what was the remedy for the nuisance. Another nuisance was coal smoke, which carried impurities into the atmosphere. The chief part of the smoke was from factories and works generally, and the state of things prevailing was a disgrace to manufacturers, municipality, and the community. Dense fogs, which so frequently occur in towns, cause distress to those suffering from pulmonary complaints. Improvement could be effected by the filtering of air before allowing it to enter our dwellings, but that could scarcely succeed in private houses as at present constructed. In hospitals, especially those for the treatment of consumption, some such scheme might be tried.

FOREIGN COMPETITION.

Proceeding, the President said, "A great deal has been said of late as regards the dangers to our manufactures from competition on the part of foreign producers. I am myself too little in touch with the manufacturing industries of the present day to say whether the danger is real and present, or whether it is merely apprehended and distant. If, however, it be permitted to draw conclusions from what one sees in travelling on the Continent, it would seem that in some departments of industry, especially the chemical, and, more especially, that of colouring matters, foreign competition is a very serious matter, but whether the evil is one that can be remedied by mechanical and educational measures seems to me doubtful. As long as human beings exist there will always be differences of talent and disposition between individual and individual, and one nation and another. In technical, as in other matters, special talents show themselves. The English have always been noted for great mechanical undertakings, the Germans and French for the manufacture of chemicals, especially those of organic nature. Specialities such as we see developed on a large scale in the case of different nations are also seen on a smaller scale in our own and other countries. Boots and shoes are made in one place, hats in another. Why should we deplore this state of things? Why should we not, in accordance with the principles of free trade, buy what we want where we can buy it best or cheapest? Why should we determine to make all we require ourselves? Nevertheless, there is one article of commerce as to the introduction of which into this country the most pronounced free-trader might hesitate—I mean that of beetroot sugar, which is largely imported into this country and offers a very formidable competition to the cane sugar of our Colonies. The chemistry of sugars having attained a high degree of development, and the distinction between various kinds of sugar being, it is supposed, well understood, it may nevertheless be asked whether cane sugar and beetroot sugar are in reality perfectly identical. In the opinion of some experts beetroot sugar is much sweeter, and more soluble in water than cane sugar. I do not attach much importance to such observations, but differences of a serious nature do, however, subsist between the two sugars as regards their respective mother-liquors or molasses. The molasses of cane sugar may be and are largely consumed in the shape of treacle; those of beet sugar contain substances which render it entirely unfit for human food, and they are utilised accordingly in another way. Among these substances betaine is mentioned, and this there is good reason to suppose is a poison. However, poison or no poison, it might be maintained by purists—people who say that soda-water should contain soda, though the consumer may not want it, and arsenical soap sufficient arsenic to justify its name—that cane sugar and beet sugar should be respectively labelled as such. The whole subject is one that merits exhaustive inquiry.

ARTIFICIAL CANE SUGAR.

While on the subject of sugar, I may conclude with the fact, not generally known, that a distinguished chemist, Dr. Leon Marchlewski, a former collaborator of mine, has succeeded in preparing cane sugar artificially. This important discovery, though it is not likely to have any immediate practical consequences, opens out a vista stretching far away into the *terra incognita* of the constitution of organic compounds.

After a hearty vote of thanks to the President, the usual business of the meetings was concluded and the members adjourned to lunch at the invitation of the Manchester Section.

In the afternoon Dr. Schunck held a garden party at his residence. The rest of the week was devoted to the usual technical and pleasure outings.

Between the hours of 10 a.m. and 5 p.m. the following places were open to inspection by the members, large parties visiting nearly all of them:—The Crematorium, the Corporation Gas Works, the Electric Lighting Works, Hydraulic Power Supply, and the Corporation Cold

Air Stores. The Manchester Technical Schools, the Salford Technical Schools, and the Peel Park Museum, were also thrown open. The Lord Mayor of Manchester held a reception in the evening at the Town Hall.

Thursday, July 15th.—The members went for an excursion on the Ship Canal to Latchford, returning by train in time for the annual dinner. Luncheon was provided by the Manchester Section. A party of about 80 left for Leek, where Sir Thomas Wardle arranged for visits to his dye works, and at 1 p.m. entertained the visitors at luncheon. At 3 p.m. the members proceeded by carriage over Axe Edge (2,000 feet high) to Buxton, thence returning to Manchester at 5.30 p.m. in time for the annual dinner, prior to which there was a reception by the President.

Friday, July 16th.—The members left Manchester for an excursion to Beeston and Peckforton Castles. Lunching at Beeston, they drove to Chester, via the Iron Bridge, arriving in Manchester by train about 6 p.m., in time for the smoking concert. Members with ladies who did not wish to return for the smoker broke their journey at the Iron Bridge, whence after tea they sailed down the River Dee to the ancient city of Chester, returning by train to Manchester.

Saturday, July 17th.—To-day, the members leave the Grand Hotel by carriages for the works of Messrs. Levenstein, Limited, at Blackley, and after the inspection of the works Mr. Levenstein will entertain his visitors at luncheon at the Grand Hotel. In the afternoon Mr. Councilor Frankenburg gave a garden party. The weather throughout was perfect. The meeting of 1898 will be held at Nottingham.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols are very firm, and buyers are plentiful at 2s. 3d. for 90's and 2s. 2d. to 2s. 3d. for 50/90's. There is very little change to note in the other products. Crude carbolic acid remains the same, though 40% crystals are rather easier at 7½d. Solvent naphtha and crude remain as last quoted. Both pitch and anthracene are a little more hopeful, but unchanged in price so far.

Sulphate of ammonia keeps steady in price, and this, coupled with good shipments and a fairly active home demand, leaves more room for congratulation than complaint. The forward market keeps interesting. There would be buyers up to the end of the year at £7. 12s. 6d., but London makers stand out for £7. 15s. and £8. in the North. Current prompt values are:—Beckton, £7. 11s. 3d.; London, £7. 10s.; Liverpool, £7. 12s. 6d.; Hull and Leith, £7. 10s.

MISCELLANEOUS CHEMICAL MARKET.

There is a continued good inquiry for all the products of the alkali trade for export, and prices show little or no variation. Bleaching powder is in strong demand, and prices are for prompt delivery, £6. 10s. f.o.r., and £6. 12s. 6d. to £6. 15s. f.o.b. Liverpool, and £6. 10s. f.o.b. Tyne. Caustic soda in all positions is without alteration, but if anything there is an easier tendency. Spot quotations, f.o.b., Liverpool, are as follows:—77%, £8 17s. 6d. 74%, £8. 70%, £7. 2s. 6d.; 60%, £6. 2s. 6d. nett, 10 ton lots. Ammonia alkali unchanged in price and in fairly steady demand. Soda crystals and bicarbonate without alteration. Chlorates in poor request at 4d. and 4½d. respectively for potash and soda. Sulphate of copper: there is only little doing at £16., f.o.b.; forward quotations are slightly lower. Sulphur, £4. 12s. 6d., bulk f.o.r. Alkali moving more freely at 19s. to 20s. f.o.r. Brown acetate of lime, £4. 15s. c.i.f.; grey, £8. Acetate of soda £12. 10s. For all acids and acetic acid demand just now is below the average. There is also a very slack inquiry for all the chemicals used in the textile trades, and the long continued quietness is the subject of much complaint. Generally, prices are all in buyers' favour. Aniline oil and salt remain steady. White arsenic is selling more freely at £22. f.o.r., In prussiate of potash there is good business doing at 5½d. Cyanide 9¾d. per lb. For potash caustic and carbonate there is moderate inquiry, and prices are well maintained for the present, but slightly easier for forward delivery. Trade generally throughout the country continues quiet.

REPORT ON MANURE MATERIAL.

The market has been very quiet owing to indifference of buyers. Quotations for mineral phosphates are unchanged, but in order to induce business sellers have had to make concessions. There is nothing fresh reported in River Plate bones, nominal value of handy

cargoes for shipment remaining at £3. 12s. 6d. per ton. East India bone meal may be had at £3. 11s. 3d. per ton, on spot or for shipment. Nitrate of soda is again quieter, though spot prices remain 7s. 6d. per cwt. for ordinary, up to 7s. 7½d. per cwt. for fine quality.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, dearer. Scotch warrants closed at 43s. 11½d.; Middlesbrough, 39s. 3½d. cash; and hematite, 45s. 10d. Copper firm: Chili bars, G.O.B.'s and G.M.B.'s, closed at £47. 13s. 9d. to £47. 18s. 9d. cash, and £48 to £48 5s. three months. Tin steady: Straits closed at £62. 10s. to £63. cash, and £63 1s. 3d. to £63. 11s. 3d. three months; Australian, £63. 15s.; English ingots, £66. Lead quiet: Spanish, £12. 3s. 9d. to £12. 5s.; English, £12. 7s. 6d. Silesian spelter, ordinary, £17. Nickel, 1s. 2½d. Antimony, £29. 15s. Quick-silver: First hands, £7. 5s.; second hands, £7. 3s. 6d. Copper shares steady: Cape, 2½ to 2½; Copiapo, 2½ to 2½; Libiola, 2½ to 2½; Mason and Barry, 2½ to 3; Rio Tinto, 22½ to 22½; Tharsis, 5½ to 5½.

GLASGOW, WEDNESDAY.—Market steady, and a fair business. Scotch done at 44s., 43s. 11½d., and 44s. cash; also at 44s. 2d. and 44s. 1½d. one month; buyers, 43s. 11½d. cash; sellers, 44s. Cleveland done at 39s. 3d. cash; buyers, 39s. 3½d. cash; sellers, 39s. 4d. Cumberland hematite, buyers, 46s. 10d. cash; sellers, 46s. 11. Middlesbrough hematite done at 47s. 11½d., 48s., and 47s. 11½d. cash; buyers, 47s. 11½d. cash; sellers, 48s.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—The position of palm oil is firmer. Prices are disposed to rise, and a small business is reported in hard oils at £17., and soft £17. 10s. per ton. Olive is very firm, prices having advanced £1. and £2. per tun. Linseed also is better at 15s. 6d. to 16s. per cwt. for Liverpool makes in export casks. Cottonseed is dearer and steady at the advance, there being a satisfactory demand for Liverpool refined at 15s. 6d. to 16s. per cwt. Castor oil has maintained the advance, and all qualities are firm at 3¼d. as the lowest quotation. Tallow is quiet to dullness, without change in values. Resin is moving fairly well, prices in all grades being maintained. Spirits of turpentine have followed the course that threatened last week, and are now moving quietly at 20s. 9d. per cwt. There is nothing fresh to be said about petroleum.

CAKES.—West American and Liverpool linseeds are firmer, with a fair spot demand at £4. 17s. 6d. to £5. 2s. 6d. and £6. 5s. to £7. respectively. Both home and foreign cottonseeds, whether decorticated or otherwise, are quiet, without any movement in prices. Egyptians are easier, with a small business passing at £3. 7s. 6d. per ton.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire—common £10., medium £12., best £15.; Derbyshire—common 40s., medium 50s., best 60s.; Welsh—best 90s., seconds 50s., and common 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead: £16. Red lead unchanged. Venetian red: £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide: £22. 10s. to £25.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The position of the market here has considerably improved upon the situation a week ago; the general demand is healthier, and the prices of linseed and cotton oil firmer, especially the latter, which cannot now be bought under about 7s. 6d. per ton advance upon the price current at that time. The imports to date, against the same a year ago have been:—Linseed, 322,049 quarters, against 404,396 qrs.; cottonseed, 115,735 tons against 94,134 tons; oilcake, 6,701 tons against 7,434 tons; olive oil, 3,065 tuns against 3,960 tuns; Linseed oil is quoted firm from 13s. 10½d. per cwt., spot naked; forward July-August 14s.; last four months, 14s. 3d. per cwt.; boiled and refined, from £1. to £1. 5s. per ton extra. Refined cotton oil is a trifle easier to-day than it has been, and is quoted 13s. 7½d., spot, naked; forward July-August 13s. 9d., also the same for November-April. Filtered refined, £1. 5s. per ton extra. Crude quoted 12s. 6d. per cwt. Casks £1., and ordinary barrels £1. 10s. per ton extra. Turpentine, unchanged. Castor oil from 3¼d. per lb. for first pressure. Olive oil only quiet, with no alteration. Olive soaps from £15s. 5s. per ton, ex quay Hull. Cod oils, £16. to £18. per ton. Danish butter, 99s. to 100s. per cwt.; Swedish, 95s. to 100s. per cwt. Oleines unchanged.

CAKES.—Linseed cakes are firm, 95% pure, £6. 2s. 6d. to £6. 5s. Russians, £6. 2s. 6d. Americans, £5. 5s. to £5. 10s. Oilcakes,

£5. 2s. 6d. to £5. 5s. Cotton cakes firmer: best makes, quiet, £3. 13s. 9d. to £3. 15s.; seconds, £3. 11s. 3d. to £3. 12s. 6d. per ton.; November-March delivery, £3. 13s. 9d. to £3. 16s. 8d. now quoted. Rape cakes unchanged.

PAINTS.—Business good, with no change in prices.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Buying of sulphate of ammonia got a little more of life in it during the course of last week, and to-day prompt Leith price is pretty steady £7. 10s. f.o.b. Forward business, also, has been more on the move, buyers and sellers having found a sort of agreement for the time at £8., f.o.b. Leith. Burning oil and shale products generally retain the old condition, with one exception, namely, paraffin spirit (naphtha), which has been somewhat briskly called for, and a steady 6½d. per gallon readily got. The article is extending its field as a manufacturing agent; for burning purposes it is little wanted just now. Warm weather still further interferes with the production of soda crystals, but the price is not yet affected. Borax has made a further drop to £15. or less, and sulphate of copper is also cheaper at £16. Caustic soda and bleaching powder are rather more inquired for, but the other common chemicals are dull.

Chief prices current are:—Soda crystals, £2. 12s. 6d., nett, Tyne, soda ash, 48/62°, £4. 2s. 6d. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £5. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 2s. 6d., 70/72° £7. 2s. 6d., 60/62° £6. 2s. 6d., and cream 60/62° £6., all nett, Liverpool; bleaching powder, 35/37°, £6. 10s. nett, Tyne; saltcake, 19s. to 20s.; borax, English, refined, £15. and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for Scotch and English deliveries (for export, 3¾d. nett, f.o.b. Glasgow); chlorate of potash, 4d. less 5%, any port; nitrate of soda, 7s. 6d. to 7s. 9d.; sulphate of ammonia, £7. 10s., prompt, f.o.b. Leith; sal ammoniac, first and second white, £33. and £31. nett any port; sulphate of copper, £16., less 5% Liverpool; paraffin scale, hard, 1¼d. to 1½d., and soft, 1½d. per lb.; paraffin wax, 120° semi-refined, 1¾d. to 2d. per lb.; paraffin spirit (naphtha), 6½d. per gallon; paraffin oil (burning), No. 1, 6¼d., and crystal, 6½d., at Glasgow and other big centres, for Scotch buyers (English sales ½d. to ¾d. lower); ditto (lubricating) 865° £5. to £5. 5s., 885° £5. 15s. to £6. 5s., and 890/895° £6. 10s. to £7. Week's imports of sugar at Greenock were 83,229 bags cane unrefined.

TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals are in moderate request, though there is perhaps more disposition to buy ahead. Caustic 76/77% is in good demand, and price varies from £8. 15s. to £9. per ton; 70%, £7. 10s. per ton. Soda crystals, £2. 12s. 6d. per ton, gross weight, locally. Sulphur rather firmer at £4. 15s. to £5. per ton.

Bleaching powder, soft, £6. 10s. per ton, nett; hards, £6. 15s. per ton, nett; caustic soda, 76/77%, £9. per ton, nett; do., 70%, £7. 10s. per ton, nett; recovered sulphur, 2 cwt. bags, £4. 15s. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. 6d. per ton, nett; do., 52%, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett weight; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett weight; blanc fixe, £7. 5s. per ton, nett weight; chloride of barium, refined crystals, £6. 15s. per ton, nett weight; do., 90/95% crude calcined, £6. per ton nett weight; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—There is no change in price; a fair business is doing at 9s. to 9s. 6d. per ton, f.o.b. Tees.

COALS.—Trade is steady, though there is fear that many collieries will be seriously affected if the threatened strike on the part of the engineering trade is persisted in. Coke is very firm, and for export qualities the demand is very strong. Best Northumbrian steam, 8s. 9d. to 9s. per ton; second quality, 7s. 9d. to 8s. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; gas coals, 7s. 3d. to 7s. 6d. per ton; bunker coals, unscreened, 6s. 10½d. to 7s. 6d. per ton; coke, firm, 19s. to 21s.

New Companies.

Plymine Company, Limited.—CAPITAL £1,000. in £1. shares. This company has been formed to manufacture and trade in household ammonia, plymine, petrozen, etc. Registered office, Mansfield, Hawick.

British Drysaltery Co., Ltd.—CAPITAL £5,000., in shares of £1. each. This company has been formed to carry on the business of druggists, drysaltery, &c. Registered office, 23, Old Corn Exchange, Manchester.

Zil, Ltd.—CAPITAL £20,000., in shares of £1. This company has been formed to adopt a certain agreement, and to carry on the business of soap and dye manufacturers and merchants. The subscribers to the memorandum of association are:—H. Benjamin, 34 to 35, High Holborn, W.C., merchant; C. W. Anderson, 34 and 35, High Holborn, W.C., merchant; J. Mendess, 4, Grafton-street, E., manufacturer; D. R. Blair, 9, Southampton-street, Bloomsbury, secretary; J. Wolfe, 171, Maida Vale, W., furnisher; A. F. Flood, 9, Maitland Park Villas, N.W., clerk; W. Poppleton, 255, Gray's Inn-road, W.C., clerk.

Metallic Oxides Co., Ltd.—CAPITAL £24,000., in 8,000 £1. preference shares, and 16,000 ordinary £1. shares. This company has been formed to carry on the business of manufacturers and dealers in chemicals, etc. Registered office, 82, West Regent-street, Glasgow. The subscribers to the memorandum of association are:—A. Walker, 8, Croft-street, Kilmarnock, distiller; M. Stores, 230, West Regent-street, Glasgow, chemist; J. Robertson, 48, West Nile-street, Glasgow, wine

merchant; J. M. Murray, 82, West Regent-street, Glasgow, chartered accountant; A. Mitchell, 82, West Regent-street, Glasgow, chartered accountant; D. R. Galbraith, 82, West Regent-street, Glasgow, clerk; L. W. Teble, 82, West Regent-street, Glasgow, clerk.

John Robinson and Co., Ltd.—CAPITAL £300,000., in shares of £5., of which 20,000 are preference. This company has been formed to adopt an agreement with a company of the same name, and A. R. and T. Robinson, its liquidators, and to carry on the business of manure manufacturers and seed crushers. The subscribers to the memorandum of association are:—A. R. Robinson, Blackwell House, nr. Bristol, seed crusher; E. Robinson, Stockwood, Keynsham, seed crusher; T. Robinson, West Town, Somerset, R.S.O., seed crusher; Mrs. J. Robinson, Blackwell House, near Bristol; R. Cockle Holdenhurst, Ashley Hill, Bristol, accountant; S. Robinson, Wenvoe, Cardiff, timber importer; R. Y. D. Ellis, 20, Waverley-road, Redland, Bristol, salesman.

Gazette Notices.

PARTNERSHIPS DISSOLVED.

R. C. H. BONSOR and M. W. BONSOR, dye manufacturers and merchants, Bradford, under the style of J. and R. Bonsor and Co.
B. B. RAYNER, W. H. and F. H. CONYERS, tanners, Baldersby, Yorks, under the style of The Baldersby Tanning Co.

BANKRUPTCY ACTS, 1883 and 1890.

Adjudication.

SILKSTONE, BENJ., drysalter, Wolverhampton.

IMPORTS OF CHEMICAL PRODUCTS

AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending July 3rd.

Acetate of Lime — U. States, 1,250 bgs.	H. Wallace & Co.
Acetic Acid — Holland, 2 pks.	Soundy & Sons
" 15	Little & Johnston
" 109	A. & M. Zimmermann
" 50	R. W. Greeff & Co.
Acetone — Germany, 9 brls.	Matthews & Luff
Alkali — France, 80 c.	J. Barber & Co.
Belgium, 500	W. A. Davis
Antimony — Japan, 32 t.	F. Williams, Ltd.
Asbestos — Italy, £300	Pickford & Co.
350	Brit. Asbestos Co.
Canada, 430	W. Byford
" 80	L. & I. D. Jt. Co.
Barytes — Germany, 78 cks.	W. Harrison & Co.
Holland, 88	Taylor Bros.
" 50	W. Ha rison & Co.
Germany, 20	R. W. Greeff & Co.
Belgium, 100 bgs.	Burrell & Co.
Bleaching Powder — Holland, 60 cks.	J. M. Steel & Co.
Bleaching Soda — Germany, 84 cs.	H. Lambert
Camphor — Germany, 1 ck.	T. H. Lee
" 135 tubs	S. Figgis & Co.
China, 342 158 cs.	R. Warner & Co.
Hong Kong, 149	L. & I. D. Jt. Co.
Japan, 136	"
Caoutchouc — Sydney, 50 c.	McIlwraith & Co.
Penang, 6	Butler's Wf. Ltd.
U. S., Col, 6	Prop. Bull Wf.
" 38	Lewis & Peat
E. Indies, 38	Stewart, Hall & Co.
U. States, 10	E. Cortes & Co.
" 1	Shorter & Co.
" 2	L. & I. D. Jt. Co.
Singapore, 82	"
Germany, 15	J. Lang
Zanzibar, 12	S. Figgis & Co.
Rangoon, 186	L. & I. D. Jt. Co.
Zanzibar, 119	"

Madagascar, 8	Procter Bros.
E. Indies, 155	Ralli Bros.
Madagascar, 18	S. Figgis & Co.
E. Indies, 327	J. W. Cook & Co.
Rangoon, 120	Prop. Hay' Wf.
Zanzibar, 10	Hale & Son
Carbolic Acid — Holland, 25 pks.	J. G. Back
Castor Oil — Germany, 5 cs.	W. J. Murray
France, 87 brls.	Beresford & Co.
E. Indies, 25	A. B. Curtis & Co.
" 50	Perkins & Homer
Caustic Potash — Germany, 65 drs.	Domeier & Co.
Chemicals (otherwise undescribed) — France, £11	Mory & Co.
6	Hernu, Peron & Co.
Germany, 154	H. Lambert
" 5	Petri Bros.
U. States, 98	R. Greening
" 505	F. Parker
Holland, 10	Lotz, Abbott & Co.
" 182	Phillipps & Graves
Belgium, 235	T. H. Lee
Germany, 111	John Cockerill Line
" 7,339	A. & M. Zimmermann
Brisbane, 5	L. & I. D. Jt. Co.
Holland, 30	J. M. Steel & Co.
" 6	Little & Johnston
" 25	H. Wallace & Co.
Sweden, 10	M. D. Co.
Sydney, 10	Coignet & Co.
Sweden, 90	W. Caudery & Co.
Cream of Tartar — Holland, 54 cks.	Kirkpatrick & Co.
Italy, 9	C. Webster
Canada, 1 brl.	Furness
Italy, 90	Withy & Co.
France, 5	Howard & Sons
" 5	Vokins & Co.
Dextrine — Germany, 50 bgs.	J. Barber & Co.
Dyestuffs — Alizarine — E. Indies, 2 cks.	Brit. Alizarine Co.
Argols — Algeria, 485 bgs.	B. Jacob & Sons
Italy, 117 cks.	Thames S. T. & L. Co.
Cochineal — Canaries, 9 bgs.	L. & I. D. Jt. Co.
" 2	Tomkins, Hildesheim & Co.
Cutch — France, 200 cs.	Ralli Bros.

Divl Divl — U. States, 211 bgs.	Royal Mail S P Co.
Canada, 11	W. M. Smith & Sons
Extracts — France, 200 bxs.	T. H. Lee
" 143 cks.	L. J. Levinstein & Sons
U. States, 1 brl.	H. Hermann & Co.
Austria, 100	J. & R. Grant
" 100	Boutcher, Mortimore & Co.
Germany, 5	T. H. Lee
France, 5	J. Harrison
Denmark, 1	Bailey & Co.
France, 142	Leatham, Ltd.
Gambler — Singapore, 442 bgs.	Beresford & Co.
" 947	S. Figgis & Co.
" 415	Brown & Emile
" 456	G. R. Haller
" 151 bls.	Hicks, Nash & Co.
Indigo — E. Indies, 13 cks.	Parsons & Keith
C. America, 3 snrs.	Thomasset & Co.
Myrabolams — E. Indies, 4 bgs.	Ralli Bros.
Naphthaline — Germany, 13 cks.	Fleming's Oil & Chemical Co.
Saffron — Spain, 1 cs.	Richardson, Spence & Co.
Shumac — Italy, 200 bgs.	H. Johnson & Sons
" 14 t. 10 c.	H. Clarkson & Co.
Tanners' Bark — Natal, 10 t.	Union Ltge. Co.
" 80	A. & W. Nesbitt
Melbourne, 50	"
Germany, 39	R. Brooks
Natal, 62	Flack, Chandler & Co.
" 40	Boutcher, Mortimore & Co.
" 40	Goad, Rigg & Co.
" 64	J. T. Rennie, Son & Co.
Belgium, 25	T. & H. Hicks
Farina — Holland, 50 cs.	C. Tennant, Sons & Co.
Belgium, 120	Becker & Wagner
French Chalk — Austria, 30 t.	Taylor Bros.
France, £38	A. Zumbek & Co.

Gamboge — Singapore, 11 cs.	L. & I. D. Jt. Co.
Glucose — U. States, 60 pks. 360 c.	Page, Son & East Union Ltge. Co.
" 25	150
Germany, 25	203
U. States, 500	500
" 50	300
" 150	500
" 750	750
" 2,500	2,500
" 500	500
" 250	250
" 50	294
" 525	830
" 60	60
" 425	500
" 350	1,300
" 1,000	1,000
" 50	300
" 150	859
" 250	250
" 4,090	6,295
Germany, 140	1,145
Glue — Italy, £260	Sander & Knott
Holland, 50	F. Clayton & Co.
Belgium, 228	J. Barber & Co.
Holland, 120	"
Germany, 26	M. D. Co.
France, 13	J. Harrison
Germany, 24	L. & I. D. Jt. Co.
" 23	H. Lambert
France, 25	T. M. Duché & Sons
Germany, 48	Phillipps & Graves
Holland, 40	T. H. Lee
Sydney, 100	Corquet & Co.
Lead Acetate — Germany, 13 cks.	F. Boehm
Litharge — Holland, 20 cks.	Fleming's Oil & Chemical Co.
Germany, 55	Spies Bros. & Co.

Manganese Borate— Germany, 20 kgs. Petri Bros. Manganese Ore— Japan, 25 t. F. Harberlin Manure— France, 50 t. Burnett Bros. & Sons Methyl Alcohol— Germany, 10 dms. Lister & Biggs " 7 Sutton, Carden, & Co. France, 15 cks. W. S. Barber Mica— Germany, 615 H. & G. Dufield E. Indies, 170 W. M. Smith & Sons U. States, 120 C. Ward E. Indies, 615 E. Davis & Co. " 1,232 Dundee, Perth, & Co. " " Lon'on S. Co. Canada, 7 H. Ewald & Co. Molasses— B. W. I., 110 cks. 1,390 c. Co-op. " 100 1,200 W. Sale Society " " Cooperage Wf. Co. Naphtha— Austria, 15 brls. J. & R. Grant Ochre— Holland, 1 ck. Philipps & Graves Spain, 50 sks. J. L. Lyon & Co. France, 169 cks. W. Harrison & Co. " 2 Burnett Bros. & Sons Phosphate Rock— Holland, 235 t. D. de Pass & Co. Pitch— U. States, 33 brls. T. Simpson Plumbago— Germany, 14 cks. T. H. Lee Ceylon, 426 J. Thredder, Son, & Co. " 56 Marshall & French Germany, 134 B. Gallaway " 6 H. Lambert E. Indies, 17 Montgomerie & Workman Germany, 5 Becker & Pollitzer Rangoon, 77 Marshall & French Potash— Canada, 149 c. Charles & Fox Holland, 25 cks. Philipps & Graves Potassium Bicarbonate— Holland, 15 cks. A. & M. Zimmermann Potassium Carbonate— Germany, 10 c. R. W. Greeff & Co. Belgium, 205 Petri Bros. Potassium Chloride— Germany, 500 bgs. F. W. Berk & Co. Holland, 12 cks. H. Johnson & Sons Potassium Oxalate— Holland, 20 cks. R. W. Greeff & Co. Pyrites— Spain, 600 t. Anderson, Anderson, & Co. Quicksilver— Italy, 100 flsks. H. Bath & Son Rosin— Germany, 10 brls. T. H. Lee Saltpetre— Germany, 5 bgs. L. & I. D. Jt. Co. " 35 cks. Jt. Co. " 30 J. Hall & Son " 70 kgs. Hore & Scrivener E. Indies, 650 bgs. Perkins & Homer " 863 Lucas & Spencer's Wf " 310 L. & I. D. Jt. Co. Sodium Acetate— France, 69 cks. 5 bgs. J. Harrison Starch— Holland, 45 cs. Philipps & Graves " 144 T. H. Lee Germany, 2,720 Horne & Co. U. States, 5,713 bgs. Union L. Co. " 375 pks. C. Tennant, Sons, & Co. Germany, 200 cs. " 154 Philipps & Graves U. States, 100 bgs. Williams, Torrey, & Co. France, 11 cs. W. E. Cole Holland, 340 A. Starck " 1,950 Little & Johnston Belgium, 10 Leach & Co. " 120 Becker & Wagner " 66 F. Clayton & Co. " 100 Hore & Scrivener U. States, 2,375 bgs. Bertel Food Co. " 100 cs. Anderson & Colman " 1,600 J. Forsey " 1,600 Oblenschlager Bros. " 1,600 Union L. Co. " 160 E. Olyett & Sons	Stearine— Germany, 77 cs. T. Palmer France, 69 bgs. H. Hill & Sons U. States, 268 43 cks. Wilsons & Furness Co. Belgium, 125 8 H. Hill & Sons France, 240 G. Boor & Co. Sulphur— Italy, 100 t. Soundy & Sons " 10 Hyslop & Symonds " 212 G. Boor & Co. " 5 Laughland, Mackay, & Co. Tartaric Acid— Holland, 12 pks. Kirkpatrick & Co. France, 12 B. & F. Wf. Co. Germany, 1 F. C. Devon & Co. Holland, 2 C. Christophersen & Co. France, 3 A. Edwards Ultramarine— Holland, 4 cks. Taylor Bros. " 10 cs. J. Barber & Co. Germany, 21 pks. Steinhoff, Sons, & Co. Holland, 10 cs. Hernu, Peron, & Co. " 9 Philipps & Graves " 20 pks. J. Owen Varnish— U. States, 26 pks. Wilsons & Furness Co. " 12 Dawson Bros. " 4 Beck & Pollitzer " 6 Davies, Turner, & Co. Verdigris— France, 4 cks. B. & F. Wf. Co. White Lead— Belgium, 97 cks. T. & W. Farmiloe, Ltd. Germany, 15 kgs. Hore & Scrivener " 38 cks. Taylor Bros. " 53 F. Broome Belgium, 5 Becker & Wagner Wood Pulp— Sweden, 340 bls. J. Owen " 200 Tough & Henderson " 334 Henderson, Craig, & Co. " 799 Alsing & Co. Germany, 203 W. Friedlaender Canada, 1,772 Becker & Co. Germany, 250 Christophersen, Andrews, & Co. " 40 Hernu, Peron, & Co. " 104 G. S. N. Co. " 200 E. J. & W. Goldsmith Canada, 4,536 Henderson, Craig, & Co. " 1,469 Sweden, 800 W. E. Bott & Co. " 150 London Paper Mills Co. " 400 W. G. Taylor & Co. Norway, 300 " 5,043 London Paper Mills Co. " 270 Philipps & Graves Holland, 240 Tough & Henderson " 260 Johnsen & Jorgensen Norway, 600 E. J. & W. Goldsmith Holland, 18 Henderson, Craig, & Co. " 540 Philipps & Graves " 1,224 London Paper Mills Co. Norway, 3,100 Johnsen & Jorgensen Zinc Oxide— Germany, 125 cks. Spies Bros. & Co. " 100 R. W. Greeff & Co. Holland, 10 G. Rahn & Co. " 130 J. Matron " 25 Fleming's Oil & Chemical Co. " 50 brls. Perkins & Homer Germany, 25 cks. W. Balchin, Ltd. Zinc Sulphate— Germany, 32 cks. F. Smith	Castor Oil— Genoa, 60 cs. Evans, Sons & Co. Chemicals (otherwise undescribed) Hamburg, 2 cks. 17 cs. Colours— New York, 2 pks. J. Mathews & Co. Stettin, 50 cks. 50 kgs. Antwerp, 1 ck. Rotterdam, 6 cs. 5 tubs Cottonseed Oil— New York, 50 brls. Cream of Tartar— Bordeaux, 13 cks. Barcelona, 5 pks. Sachse & Klemm Dried Blood— San Nicholas, 119 bgs. Dye-stuffs— Cutch Rangoon, 550 bxs. Corfu, 110 bds. W. Forsberg & Co. Trieste, 9 t. Indigo Rotterdam, 16 cs. Logwood Laguna, 7 crotchets. D. Midgley & Sons Shumac Palermo, 50 bls. 250 bgs. Turmeric Calcutta, 19 bgs. Valonia Patras, 849 bgs. Papayanni & Jeremias Farina— Havre, 2,420 sks. Cunard " S. S. Co., Ltd. Fiume, 120 bgs. Glucose— New York, 100 brls. T. M. Duche & Sons " 150 Boston, 150 Hamburg, 19 cks. Glue— Fiume, 200 bgs. Stettin, 100 Rotterdam, 110 1 ck. Guano— Cape Cross, 200 t. Damaraland Guano Co. Limestone— Antwerp, 5 crts. 1 cs. J. T. Fletcher & Co. Linseed Oil— Rotterdam, 30 cks Manure— Philadelphia, 155 bgs. Mineral White— Fiume, 1,100 bgs. " 200 R. Winsor & Co. Ochre— Bordeaux, 19 cks. Alicante, 60 brls. Paint— Boston, 50 cs. Paraffin Scale— New York, 816 brls. Thompson & Bedford Rangoon, 470 bgs. Philadelphia, 300 Anglo-Am. Oil Co. 620 Phosphate— Antwerp, 500 bgs. Port Royal, S.C., 1,750 t. Phosphate Rock— Brunswick, Ga., 48 t. Pyrites— Huelva, 1,439 Matheson & Co. Rosin— Boston, 300 brls. Salicylic Acid— Hamburg, 1 cs. Soap— Bari, 109 cs. Rotterdam, 60 Soapstone— Genoa, 400 bgs. W. Harrison & Co. Starch— New York, 700 bgs. Boston, 150 55 sks. " 110 brls. J. Howard & Co.	Antwerp, 217 cs. J. T. Fletcher & Co. Baltimore, 100 Rotterdam, 327 cs. Tallow— New York, 356 tcs. Boston, 549 31 hds. " 150 T. M. Marc & Co. B. Ayres, 15 pps. Estancia & Co., Ltd. " 20 cks. Las Cabeyas San Nicholas, 15 217 half-pps. Baltimore, 130 Philadelphia, 353 G. E. Chase Tartar— Bordeaux, 5 cks. Tartaric Acid— Rotterdam, 19 cks Treacle— New York, 200 brls. Boston, 300 Ultramarine— Rotterdam, 22 cks. Varnish— Boston, 2 brls. W. H. Staynes & Smith Rotterdam, 3 cks. White Lead— Antwerp, 26 cks. J. T. Fletcher & Co. " 12 Rotterdam, 29 Wood Pulp— Boston, 312 crts. Lever Bros., Ltd. " 563 bls. Montreal, 1 bx. 4 bds. J. Hands & Son Rotterdam, 76 Zinc Oxide— Antwerp, 65 brls. Zinc White— Stettin, 25 cks. M. Ashby, Ltd. Rotterdam, 17 cks.
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MANCHESTER.

Week ending July 3rd.

Alizarine— Boulogne, 2 cs. 32 brls.	
Ammonia— Boulogne, 25 cyldrs.	
Aniline Colours— Boulogne, 20 cks. 9 cs.	
Barytes— Boulogne, 200 bgs.	
Beta-Naphthol— Boulogne, 2 cks.	
Chemicals (otherwise undes.)— Boulogne, 4 cks.	
Colours— Rotterdam, { 25 cks. 9 brls. Hamburg, 24 cs. 2 bxs.	
Dextrine— Hamburg, 7	
Farina— Stettin, 100 bgs.	
Stettin, 50 bgs. H. D. Pochin & Co.	
70	
Fustic— Punta Arenas, 899 t. E. Brownbill & Co.	
Glucose— Stettin, 61 cks. 300 bgs.	
Glue— Rotterdam, 160 bgs. Antwerp, 4 bls.	
Lead Acetate— Hamburg, 13 cks.	
Limestone— Antwerp, 1 cs. J. T. Fletcher & Co.	
1 crt.	
Litharge— Boulogne, 7 cks.	
Logwood— Cape Haiti, 440 t. (about)	
Mineral White— Bordeaux, 100 bgs.	
Pitch— Bordeaux, 6 cks.	

LIVERPOOL.

Week ending July 1st.

Alumina Hydrate— Antwerp, 8 cks. J. T. Fletcher & Co.	
Barytes— Rotterdam, 43 cks.	
Bone Ash— San Nicholas, 79 bgs.	
Borate of Lime— New York, 2,380 bgs. Pac. Borax & Redwood Cheml. Wks., Ltd.	
Borax— Hamburg, 34 cks.	

Potash — Boulogne, 30 cks.	
Potassium Carbonate — Stettin, 38 cks.	Stott, Coker, & Co.
Potassium Chlorate — Gothenburg, 50 kgs.	40 brls.
Potassium Chloride — Hamburg, 100 cks.	34 dms.
Potassium Sulphate — Rotterdam, 100 cks.	
Pyrites — Huelva, 1,643 t.	
Soap — Bordeaux, 4 cs.	
Starch — Boulogne, 96 cs.	
Tartar — Bordeaux, 3 cks.	
Tartaric Acid — Bordeaux, 3 cks.	
Wood Pulp — Stettin, 56 brls.	Stott, Coker, & Co.
Hamburg, 80	
Sundsvall, 300	
Hernösand, 2,400	
Gefle, 2,269	Henderson, Craig, & Co.
Stugsund, 4,781	
Gothenburg, 870	
Rotterdam, 15	
Zinc Oxide — Boulogne, 100 brls.	
Antwerp, 9 cks.	10
Zinc Sulphate — Gothenburg, 120 bgs.	20 kgs.

HULL.*Week ending July 3rd.*

Alizarine — Rotterdam, 40 cks.	W. & C. L. Ringrose
Aluminium — New York, 51 cs.	Wilson, Sons, & Co., Ltd.
Antimony — Hamburg, 35 cs.	Wilson, Sons, & Co., Ltd.
Barium — Riga, 37 cks.	
Barytes — Bremen, 19 cks.	T. F. Chambers & Co.
Antwerp, 196	Bailey & Leatham, Ltd.
Amsterdam, 97 cks.	W. & C. L. Ringrose
Carbolic Acid — Hamburg, 12 cks.	Wilson, Sons, & Co., Ltd.
Chemicals (otherwise undescribed) — Hamburg, 1 ck.	Wilson, Sons, & Co., Ltd.
" 4	
Cod Oil — Aalesund, 400 brls.	Wilson, Sons, & Co., Ltd.
Bergen, 30	"
Colours — Rotterdam, 13 cks.	W. & C. L. Ringrose
54 pks.	2 cs. Wilson, Sons, & Co., Ltd.
Antwerp, 33	3 cs. Storry, Witty, & Co.
" 11	
Danzig, 29	Wilson, Sons, & Co., Ltd.
Amsterdam, 2	W. & C. L. Ringrose
Rotterdam, 1 brl.	Hutchinson & Son
Cottonseed Oil — New York, 250 brls.	Wilson, Sons, & Co., Ltd.
Cryolite — Copenhagen, 3 cks.	Wilson, Sons, & Co., Ltd.
Dextrine — Stettin, 50 bgs.	Wilson, Sons, & Co., Ltd.
Farina — Stettin, 1 bg.	Wilson, Sons, & Co., Ltd.
Harlingen, 839 brls.	Hutchinson & Son

Glucose — New York, 25 brls.	Wilson, Sons, & Co., Ltd.
" 250	
Glue — Christiansand, 1 brl.	Wilson, Sons, & Co., Ltd.
Stettin, 13 cks.	
Rouen, 3	Rawson & Robinson
Dunkirk, 33 cks.	Wilson, Sons, & Co., Ltd.
Lead Acetate — Hamburg, 12 cks.	Wilson, Sons, & Co., Ltd.
Limestone — Antwerp, 1 crt.	Wilson, Sons, & Co., Ltd.
Magnesium — Hamburg, 1 ck.	Bailey & Leatham, Ltd.
Nickel Salts — Rotterdam, 1 ck.	W. & C. L. Ringrose
Ochre — Rouen, 59 cks.	Rawson & Robinson
Phosphate — Ghent, 180 t.	Wilson, Sons, & Co., Ltd.
Antwerp, 5 cks.	15 bgs. "
Amsterdam, 26 cks.	Hutchinson & Son
Libau, 1 brl.	
Potash — Rotterdam, 70 cks.	Hutchinson & Son
Hamburg, 22	Wilson, Sons, & Co., Ltd.
Dunkirk, 16	44 dms. "
Saltpetre — Hamburg, 20 bgs.	Wilson, Sons, & Co., Ltd.
Soap — New York, 40 bxs.	Wilson, Sons, & Co., Ltd.
" 318 brls.	
Antwerp, 100 bgs.	
Soda — Antwerp, 100 bgs.	Wilson, Sons, & Co., Ltd.
Starch — Ghent, 275 cs.	Hutchinson & Son
Bremen, 2,275 pks.	Veltmann & Co.
Antwerp, 40 cs.	Bailey & Leatham, Ltd.
Amsterdam, 52	Hutchinson & Son
Ghent, 284	Wilson, Sons, & Co., Ltd.
Antwerp, 82	"
Tallow — Dunkirk, 103 cks.	Wilson, Sons, & Co., Ltd.
Tar — Uleaborg, 1,500 brls.	J. M. Hamilton & Co.
300 hf.-brls.	
Tartar — Bordeaux, 12 cks.	Rawson & Robinson
Tartaric Acid — Rotterdam, 8 cks.	Hutchinson & Son
" 2	W. & C. L. Ringrose
Tin Chlorate — Rotterdam, 2 cks.	Hutchinson & Son
Treacle — New York, 325 brls.	Wilson, Sons, & Co., Ltd.
Turpentine — Bordeaux, 20 cks.	Rawson & Robinson
Ultramarine — Bremen, 12 cks.	
Yarnish — New York, 3 brls.	Wilson, Sons, & Co., Ltd.
11 pks.	
Hamburg, 4 cks.	Todd & Son
White Lead — Rotterdam, 11 cks.	Hutchinson & Son
Antwerp, 24	Bailey & Leatham, Ltd.
Amsterdam, 38	Hutchinson & Son
" 4	W. & C. L. Ringrose

Wood Pulp — Gothenburg, 412 brls.	Wilson, Sons, & Co., Ltd.
Christiania, 902	45 cs. Bailey & Leatham, Ltd.
Hamburg, 40 pks.	Wilson, Sons, & Co., Ltd.
Bergen, 306	
Zinc White — Rotterdam, 10 cks.	Hutchinson & Son

GLASGOW.*Week ending July 8th.*

Acetic Acid — Rotterdam, 7 cks.	J. Rankine & Son
Alkali — Rotterdam, 20 cks.	J. Rankine & Son
Ammonium Sulphate — Rotterdam, 30 cks.	J. Rankine & Son
Antimony Sulphide — Hamburg, 1 ck.	
Barium Sulphate — Antwerp, 50 bgs.	
Barytes — Rotterdam, 7 cks.	J. Rankine & Son
Castor Oil — Antwerp, 25 cks.	
Chrome Ore — Maeri, 2,500 t.	J. & J. White
Colours — Rotterdam, 8 cks.	3 cs. 5 brls. 2 bxs. J. Rankine & Son
Antwerp, 3 cks.	
Dyestuffs — Alizarine, 104 cks.	1 cs. J. Rankine & Son
Aniline, 12 cks.	J. Rankine & Son
Indigo, 6 chs.	J. Rankine & Son
Valonia — Smyrna, 450 t.	John Tullis & Son
" 100	James Buntin & Co.
Glue — Rotterdam, 60 bgs.	J. Rankine & Son
Hamburg, 180	
Lamp Black — Gothenburg, 5 brls.	
Ochre — Rouen, 59 cks.	
Paraffin Scale — New York, 200 brls.	
Phosphorus — Baltimore, 5 cs.	
Potash — Rotterdam, 42 cks.	J. Rankine & Son
Rosin — Baltimore, 852 brls.	
New York, 1,052	
Soap — Rouen, 50 cs.	
Sodium Acetate — Rouen, 24 cks.	
Starch — Rotterdam, 20 cs.	J. Rankine & Son
Baltimore, 200 bgs.	
New York, 100	100 sks. J. Rankine & Son
Amsterdam, 20 bxs.	
Stearine — Rotterdam, 15 cks.	J. Rankine & Son
Amsterdam, 62 bgs.	"
Tartar — Bordeaux, 2 cks.	
Yarnish — New York, 10 brls.	1 bx.
Waste Salt — Hamburg, 1,516 bgs. & qty.	
Wood Pulp — New York, 44 rolls	103 bndls.
Christiania, 2,292 brls.	114 cs.
Zinc Sulphate — Gothenburg, 120 bgs.	20 kgs.

TYNE.*Week ending July 3rd.*

Acids — Antwerp, 30 cks.	Tyne S. S. Co.
Alum Earth — Hamburg, 27 cks.	Tyne S. S. Co.
Barium Chlorate — Rotterdam, 350 bgs.	Tyne S. S. Co.
Barytes — Rotterdam, 250 bgs.	Tyne S. S. Co.
19 cks.	
Glue — Hamburg, 20 bgs.	Tyne S. S. Co.
Limestone — Antwerp, 5 crts.	Tyne S. S. Co.
Phosphate — Gefle, 150 t.	
Plumbago — Hamburg, 18 cks.	Tyne S. S. Co.
Pyrites — Huelva, 1,804 t.	Tharsis Sulphur & Copper Co.
Salt — Hamburg, 390 t.	Clephans & Wiencke
Soap — Rotterdam, 106 cs.	Tyne S. S. Co.
Starch — Rotterdam, 194 cs.	Tyne S. S. Co.
Antwerp, 40	"
Tallow — Copenhagen, 3 cks.	
Tartaric Acid — Rotterdam, 6 cks.	Tyne S. S. Co.
Ultramarine — Rotterdam, 2 cks.	Tyne S. S. Co.
Waste Salt — Hamburg, 185 t.	Clephans & Wiencke
White Lead — Antwerp, 12 cks.	Tyne S. S. Co.

GOOLE.*Week ending June 30th.*

Alizarine — Rotterdam, 27 brls.	
Alkali — Calais, 2 cks.	
Dyestuffs (otherwise undescribed) — Boulogne, 53 cks.	4 cs. 94 pks.
Rotterdam, 232	40
Glucose — Hamburg, 94 cks.	
Madder — Rotterdam, 3 cks.	
Phosphate — Ghent, 1,600 bgs.	
Plumbago — Boulogne, 2 cks.	
Potash — Hamburg, 10 cks.	3 dms.
Calais, 8	
Dunkirk, 4	20
Saltpetre — Rotterdam, 70 bgs.	
Soda — Rotterdam, 13 dms.	
Waste Salt — Hamburg, 140 cks.	

GRIMSBY.*Week ending July 3rd.*

Aniline — Antwerp, 15 pks.	
Asbestos — Hamburg, 3 bgs.	
Barytes — Rotterdam, 100 bgs.	
Caoutchouc — Hamburg, 3 cs.	
Chemicals (otherwise undescribed) — Hamburg, 1 ck.	5 cs. 13 pks.
Antwerp, 5 cbys.	38 bgs. 3
Dyestuffs (otherwise undescribed) — Dieppe, 21 cks.	
Pitch — Dieppe, 10 cks.	
Shumac — Dieppe, 6 cks.	
Wolfram Ore — Hamburg, 5 cs.	

EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending July 7th.

Acids—		
E. London,	21 cs.	£14
Santos,	63	176
Cape Town,	1	8
Pt. Elizabeth,	7	19
Alkali—		
Lyttelton,	10 t.	£71
Toronto,	11 c.	30
Launceston,	4	18
Adelaide,	9	14
Hobart,	6	28
Alum—		
Calcutta,	30 t. 3 c.	£74
Ammonia—		
Bombay,	4 cs.	£12
Ammonia (Liquid)—		
Calcutta,	3 cs.	£13
Penang,	4	20
Ammonium Chloride—		
Bussorah,	10 brls.	£30
Constantinople,	4 t.	123
Ammonium Sulphate—		
Amsterdam,	100 t.	£800
Batadoes,	40	320
Colombo,	4	34
Las Palmas,	44	345
Burgh,	130	975
Ostend,	86	703
Rotterdam,	55	420
Bremen,	470	3,102
Hamburg,	270	2,140
Bisulphite of Lime—		
Sydney,	2 t. 15 c.	£35
Bleaching Powder—		
Pt. Elizabeth,	1 t.	£11
Gibraltar,	3 c.	5
Borax—		
Auckland,	3 t.	£59
Harlingen,	10 cs.	13
Carbolic Acid—		
Colombo,	2 cs.	£10
Cologne,	23 brls.	102
Carbonic Acid Gas—		
Jersey,	40 tubes	£15
Rangoon,	12 flasks	48
New York,	21 cs.	11
Caustic Soda—		
Auckland,	10 c.	£8
Fremantle,	1 t. 16	26
Brisbane,	16	115
Pt. Elizabeth,	6	152
Hobart,	6	45
Chemicals (otherwise undescrbed)		
Bombay,	2 cs.	£23
Delagoa Bay,	6 pks.	19
Calcutta,	7	33
Cooktown,	2	10
Fremantle,	3	14
St. John, N.B.,	4 cks.	18
Madras,	2	20
Sydney,	26	135
Havre,	6	26
Trinidad,	1	26
Brisbane,	10	26
Rosario,	11	83
B. Ayres,	5 brls.	17
Melbourne,	30	72
Durban,	8 tks.	90
Rotterdam,	2	37
Cologne,	11	8 c.
Cairns,	4 kgs.	17
Hamburg,	37 dms.	113
Citric Acid—		
Hamburg,	8 kgs. 28 pks.	£318
Amsterdam,	2	50
Newcastle,	2	12
Auckland,	3	21
Cologne,	1 ck.	30
Montreal,	5	37
Fremantle,	1 cs.	3
Bombay,	1	7
Rockhampton,	7	42
Shanghai,	1	7
Brussels,	5	30
Brisbane,	1	20
Genoa,	10	60
Rotterdam,	15	91
St. Petersburg,	1 t.	141
Libau,	13	82
Batoum,	5	32
Coal Products—		
Alizarine		
Lisbon,	4 cks.	£61
Aniline		
Melbourne,	2 cs.	£10

Aniline Dyes		
Melbourne,	1 cs.	£8
Aniline Oil		
Genoa,	5 dms.	£180
New York,	29	1,030
Aniline Salts		
Genoa,	10 cks.	£70
St. Petersburg,	4 pks.	13
New York,	50	350
Anthracene		
Dusseldorf,	243 cks.	£1,370
Cologne,	21	126
Benzine		
Melbourne,	22 crts.	£31
Benzol		
Rotterdam,	98 cks.	£397
Hamburg,	3	20
Boulogne,	151	556
Cologne,	12 dms.	280
Colours		
Boston,	4 cks.	£48
Creosote		
Marseilles,	8 brls.	£15
New York,	1,500 cks.	869
Creosote Salts		
Hamburg,	1,400 bgs.	£375
Naphtha		
Auckland,	40 dms.	£40
Naphthaline		
Hamburg,	1 ck. 102 bgs.	£71
Pitch		
Malmo,	10 t.	£13
Calcutta,	50 brls.	30
Montreal,	340 cks.	85
New York,	679	338
Antwerp,	1,520	2,052
Tar		
Durban,	1,050 dms.	£56
Tar Oil		
Pt. Elizabeth,	50 cks.	£26
Copper Sulphate—		
Lyttelton,	3 t.	£52
Antwerp,	10	160
Canterbury,	1	17
Paris,	45	734
Hamburg,	10	150
Cream of Tartar—		
Rockhampton,	4 t.	£341
Adelaide,	5 c.	23
E. London,	3	29
Fremantle,	15	64
Cooktown,	4	12
Melbourne,	10	39
Disinfectants—		
Madras,	1 cs.	£11
Calcutta,	999 pks.	200
Melbourne,	32	58
Brisbane,	15	26
Auckland,	14	25
Bombay,	100 dms.	82
Santos,	9	34
Cape Town,	3	140
Manure—		
Brisbane,	6 t.	£70
Ghent,	31	2 c.
Nitrous Oxide—		
Adelaide,	6 cs.	£138
Oxygen—		
Amsterdam,	1 cs.	£40
Phosphorus—		
Pt. Elizabeth,	5 cs.	£48
Potash—		
Melbourne,	2 t. 12 c.	£72
New York,	2 cs.	44
Brussels,	4	114
Potash Salts—		
Wellington,	6 t. 12 c.	£410
Potassium Bichromate—		
Riga,	8 c.	£18
Potassium Cyanide—		
Philadelphia,	1 t. 5 c.	£111
Melbourne,	50 cs.	350
Sydney,	3	252
Durban,	13	7
Townsville,	2	165
Fremantle,	3	270
Potassium Prussiate—		
Rouen,	2 cks.	£23
Rotterdam,	17	225
New York,	18	263
Genoa,	2	25
Salt Cake—		
Shanghai,	2 c.	£11
Saltpetre—		
Corunna,	2 t.	£40
Santander,	1	25
Hamburg,	1	18
Bahia,	9	196

Sydney,	4	74
Rio de Janeiro,	1	27
Sheep Dip—		
Timaru,	149 dms.	8 cks. £102
Lyttelton,	300	25
Launceston,	200 cs.	194
B. Ayres,	1,000	2,350
New York,	50	25
Hobart,	150	263
Benheim,	6	10
Soda—		
Bremen,	19 c.	£65
New York,	2 t. 14	10
Cape Town,	3	5
Soda Ash—		
Melbourne,	1 t. 5 c.	£67
Soda Salts—		
Brussels,	4 c.	£26
Sodium B carbonate—		
Townsville,	2 t.	£15
E. London,	10 c.	7
Auckland,	2	7
Invercargill,	2	13
Brisbane,	1	7
Sodium Prussiate—		
Rouen,	10 c.	£17
Sodium Silicate—		
Hobart,	11 t. 17 c.	£60
Sulphur—		
E. London,	50 cks. 100 kgs.	£86
Pt. Elizabeth,	125	125
Sulphuric Acid—		
Durban,	10 cs.	£18
Penang,	1 t. 10 c.	18
Cape Town,	3	20
Superphosphates—		
Lyttelton,	300 t.	£795
Libau,	300	600
Superphosphate of Lime—		
Wellington,	40 t.	£106
Tartar—		
Cape Town,	5 c.	£20
Tartaric Acid—		
Montreal,	7 pks.	£108
Wellington,	5 c.	29
Fremantle,	3	17
Adelaide,	5	33
Melbourne,	1 t.	117

LIVERPOOL.

Week ending July 7th.

Acetic Acid—		
Santos,	1 t. 3 c.	£16
Alum—		
Melbourne,	2 t.	£10
Halifax,	1	5
Rangoon,	1 c.	2
Galatz,	3	14
Oporto,	1	18
New York,	2	11
Constantinople,	2	11
Penang,	1	10
Alexandria,	3	18
Ammonium Carbonate—		
Corunna,	4 c.	£5
Naples,	6 brls.	9
New York,	8	12
Montreal,	2 t. 10	70
Canil,	1	4
Callao,	2 q.	8
Ammonium Chloride—		
Beyrout,	14 c.	£22
Naples,	12	12
Hioho,	1 t.	18
Samsoun,	1	31
Genoa,	4	96
Trieste,	2	19
Kurrachee,	2	64
Montreal,	5	8
Gothenburg,	1	26
Ammonium Sulphate—		
Honolulu,	21 t. 15 c.	£1,605
Madeira,	25	194
Samarang,	150	1,200
Valencia,	102	805
Las Palmas,	27	212
Gd. Canary,	29	249
Barium Chlorate—		
Canil,	2 c.	£8
Bleaching Powder—		
Baltimore,	96 cks.	
Bombay,	30 cs.	

Boston,	283			
Ghent,	75			
Konigsberg,	17			
Las Palmas,	15			
Montreal,	80			
New York,	402			
Oporto,	50			
Rouen,	32			
Seville,	20			
Boracic Acid—				
Boston,	3 t.	9 c.	1 q.	£94
Naples,		12		17
Antwerp,		11		15
Borax—				
Rio de Janeiro,	1 t.	3 c.		£19
Antwerp,	5			24
Callao,	1	10		16
Naples,		19	3 q.	17
Danzig,	12	6	3	210
Lisbon,	1	1	1	16
Montreal,	5			82
Halifax,	1	2	3	17
Stettin,	11		2	188
Napier, N.Z.,		8		7
Adelaide,	1	10		27
Barcelona,	2	1		37
Rosario,	1	9		26
Ghent,	1	1		17
Seville,				
Passages, }	4	12		83
Genoa,	3	17		69
Rotterdam,	12	11		253
Hamburg,	22	8	3	359
Calcium Chloride—				
Adelaide,	5 t.	3 c.	2 q.	£14
Carbolic Acid—				
Hamburg,	13 t.	4 c.		£939
New York,	13	14	3	835
Piræus,		4	2	16
Caustic Potash—				
Boston,	3 t.	11 c.		£90
Sydney,	2	8		72
Caustic Soda—				
Alexandria,	30	dms.		
Antwerp,	35			
Bahia,	30			
Baltimore,	251			
Barcelona,	680		30 pks.	
Bilbao,	60			
Boston,	50		124 brls.	
Braila,	52			
Calcutta,	40			
Callao,	40			
Canterbury,	20			
Cartagena,	25			
Cienfuegos,	12			
Corfu,	30			
Corral,	10			
Dunkirk,	35			
Fairwater,	294			
Galatz,	10			
Genoa,	300			
Gothenburg,	10			
Hamburg,	66		20 kgs.	
Hioho,			620	
Honolulu,	20			
Lisbon,	140			
Malaca,	110			
Manilla,	106			
Melbourne,	32			
Messina,	20			
Montreal,	136			
Naples,	40			
Newfairwater,	50			
N. Orleans,	110			
New York,	1,087			
Oporto,	15			
Palermo,	35			
Para,	133			
Patras,		30		
Penang,	50			
Pernambuco,	25			
Philadelphia,	150			
Piræus,	60			
Riga,	35			
Rotterdam,			47 cks.	
San Francisco,	50	25		
St. Petersburg,	115			
Samarang,	14			
San Sebastian,	60			
Santos,	26			
Savanna,	87			
Seville,		225		
Stettin,	157			
Sydney,	154			
Valparaiso,	55			
Vancouver,	45			
Yokohama,	250			

Chemicals (otherwise uncles.)—

Bremen,	5 c.	£7
Barcelona,	1 t.	27
Batoum,	8	12
Bombay,	5	182
Calcutta,	44	264
Stettin,	8	12
Genoa,	1	33
Copenhagen,	1	30
Libau,	1	30
Kurrachee,	2	79
M. Video,	20	10
Rotterdam,	2	9
Alexandria,	6	74
Hamburg,	3	180
Philadelphia,	13	9

China Clay—

Bombay,	345 cks.
Boston,	450
Genoa,	300 bgs.
Philadelphia,	80
Rio de Janeiro,	48
Vera Cruz,	25

Citric Acid—

Santos,	3 c.	1 q.	£26
Melbourne,	3	1	21

Coal Products—**Aniline Oil**

Rotterdam,	1 dm.
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Aniline Salts

New York,	31 cks.
Boston,	11 cs.

Pitch

Caril,	100 brls.
Galatz,	15 brls.
Lagos,	5 brls.

Tar

Philadelphia,	300 brls. to dms.
Piræus,	5 cks.
Singapore,	30

Copper Sulphate—

San Sebastian,	4 t.	3 c.	3 q.	£78
Landskrona,	2	8	1	37
Copenhagen,	2	19		43
Konigsberg,	2	16		39
Piræus,	1	3	1	8
Galatz,	1			16
Calcutta,	3			48
New York,	1	19	2	35
Hamburg,	1	4		20
Venice,	5	1		86
Naples,	15	2		227
Trieste,	15	7	2	259
Callao,	1	7		22
Genoa,	22	8		366
Gothenburg,	2	6	1	38
Constantinople,	1			16
Bordeaux,	114	13	1	1,949
Stettin,	20	3	3	339

Copperas—

Valparaiso,	19 t.	£35
Callao,	4	10 c.
Alexandria,	3	15
Gd. Canary,	0	10

Cream of Tartar—

Rangoon,	1 c.	£6
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Disinfectants—

Rangoon,	12 cks.	8 c.	£18
Manaos,	6		9

Dried Blood—

Gd. Canary,	4 t.	£34
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Guano—

Valencia,	10 t.	6 c.	£65
Barcelona,	33	19	221

Iron Oxide—

Montreal,	6 t.	9 c.	£43
Lisbon,	2	1	1 q.

Lime—

Accra,	7 t.	9 c.	£7
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Magnesia—

Barcelona,	60 cs.	
Havre,	86	

Magnesite—

Antwerp,	50 t.	18 c.	2 q.	£89
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Magnesium Chlorate—

Bombay,	3 t.	2 c.	£8
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Magnesium Sulphate—

Alexandria,	140 kgs.
Montreal,	2 brls.
Rio de Janeiro,	25

Manganese Borate—

St. Petersburg,	1 t.	19 c.	2 q.	£108
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Manure—

Adelaide,	50 t.		£175
St. Nazaire,	50	1 c.	2 q.
Teneriffe,	20		190

Nitric Acid—

Rio de Janeiro,	2 c.	2 q.	£3
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Oxalic Acid—

Boston,	3 t.	10 c.	£90
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Paint—

Amsterdam,	2 cs.
Antwerp,	4 cks. 14 kgs.
Bahia,	6
Beyrout,	35
Bombay,	73 dms.
Brass,	24 cs.
B. Ayres,	12
Calcutta,	80
Callao,	16 brls.
Camerons,	58
Cape Town,	8
Colombo,	10
Curacao,	1 cs.
Degama,	24
E. London,	403
Genoa,	26
Havana,	2
Hio,	6
Hong Kong,	42
Humacao,	9
Ibrail,	45
Iquique,	41
Jaffa,	1
Lagos,	67
La Libertad,	8
Lisbon,	2
Malta,	3
M. Video,	18
New York,	3
Para,	14 pks.
Pernambuco,	50
Philadelphia,	4
Quebec,	30
Rotterdam,	111
St. John's,	16
Santander,	16
Santos,	6
Sierra Leone,	80
Smyrna,	475
Salonica,	3 brls.
Shanghai,	60
Talcahuano,	60 pks.

Painters Colours—

Akassa,	57 kgs.
Alexandria,	205
Antwerp,	2 dms. 5 cks. 1
Arecibo,	5
Bahia,	1 cs. 2
Bombay,	20
Calcutta,	20
Corfu,	7
Guayaquil,	19
Havana,	1 brl.
Jaffa,	1
Las Palmas,	160
N. Orleans,	15 cs.
Paraffin Wax—	15 cs.
Alexandria,	51 bgs.
Barcelona,	51 bgs.

Phosphorus—

Hio,	5 c.	£65
Shanghai,	18	180
Yokohama,	1 t.	260

Potash Salts—

N. Orleans,	19 t.	3 c.	£1,410
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Potassium Bicarbonate—

Santos,	1 t.	15 c.	£78
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Potassium Bichromate—

Bilbao,	15 c.	£34
Alexandria,	1 ck.	9

Potassium Carbonate—

Boston,	17 t.	15 c.	£317
Para,	1	3	3 q.

Potassium Chlorate—

Stettin,	6 t.	£193
Montreal,	4	137
Wellington, N.Z.,	3 c.	5
Carril,	4	145
Libau,	10	17
New York,	35	1,180
Boston,	10	368
Melbourne,	10	17
Gothenburg,	9	319
Hio,	32	1,134

Potassium Chloride—

Axim,	13 c.	£41
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Potassium Cyanide—

Curacao,	12 c.	1 q.	£45
Cuidad Bolivar,	10		53

Salt—

Accra,	5 t.
Akassa,	300
Algoa Bay,	8
Amsterdam,	190
Antwerp,	305
Axim,	100
Bahia,	50
Baltimore,	650
Beuier Point,	200
Boston,	350
Brisbane,	65
B. Ayres,	45
Calcutta,	7,412

C. C. Castle,	500 bgs.
Egwanga,	500
Ghent,	200 t.
Gd. Bassa,	400
Iceland,	269
Iquitos,	15
Lagos,	2,531
Lyttelton,	50
Melbourne,	275
M. Video,	30
Montreal,	219
N. w York,	40
Old Calabar,	80
Pt. Elizabeth,	92
Pt. Natal,	100
Quebec,	1,000
Rotterdam,	110
Syria,	4
Trinidad,	35
Wellington,	100

Salt Cake—

Bremen,	400 t.	£450
Antwerp,	10	1 c.
Ghent,	90	3 q.

Saltpetre—

Vancouver,	10 c.	£11
San Francisco,	7 t.	8
Maranham,	1	2
Lyttelton, N.Z.,	3	64

Sheep Dip—

Wellington N.Z.,	8 t.	6 c.	2 q.	£206
Lyttelton,	9	2	3	203
Valparaiso,	4	9	1	188
M. Video,	8	4	1	400
E. London,	15			35

Soap—

Akassa,	51 bxs.	81 cs.
Alexandria,	750	4
Algoa Bay,	62	
Assinee,	600	
Barbadoes,	1,000	
Batavia,	10	
Bombay,	55	
Calcutta,	560	
Cape Town,	6	
Colombo,	121	
Colon,	20	
Constantinople,	3	
Corfu,	333	
Curacao,	500	
Delagoa Bay,	125	
Drewin,	1,781	
E. London,	25	
Genoa,	200	
Gibraltar,	555	
Guayaquil,	400	
Half Jack,	50	
Halifax,	1	
Hamburg,	60	
Havre,	641	
Ibrail,	1	
Karachi,	250	
Livingston,	22	
Malta,	120	
Manaos,	920	
Monrovia,	55	
Mossel Bay,	100	
N. Orleans,	100	
New York,	281	
Para,	550	
Pt. Said,	40	
Pt. Natal,	1,660	
Rangoon,	1	
Rotterdam,	100	
St. John's,	480	
Shanghai,	3,000	
Singapore,	6,000	
Sierra Leone,	200	
Smyrna,	22	
Sydney,	135	
Teneriffe,	1,100	
Trinidad,	350	
Valparaiso,	30	
Zanzibar,	1,000	

Soda Ash—

Antwerp,	1,080 bgs.
Baltimore,	600
Boston,	127
Bremen,	25
B. Ayres,	100 brls.
Cape Town,	80 kgs.
Copenhagen,	200 bgs.
Corfu,	75
Fiume,	84 dms.
Galatz,	100
Genoa,	200
Ghent,	10
Gothenburg,	50
Hamburg,	598
Hio,	165
Leghorn,	19
Libau,	600
Melbourne,	10 kgs. 40
Montreal,	96
New York,	330 bgs.
Oporto,	178
	10

Philadelphia,	400	58 tcs.
Piræus,		100 brls.
Rio de Janeiro,		50 dms.
Rotterdam,	230	
Savannah,	100	
St. Petersburg,		108 cks.
Smyrna,	500	
Syria,		50 brls.
Valparaiso,		56
Vigo,		10
Yokohama,	200 bxs.	

Soda Crystals—

Halifax,	67 kgs.
Limassol,	34 brls.
Lisbon,	4 cks.
Malta,	50
New York,	490
Philadelphia,	347
Smyrna,	10
Beyrout,	10
Susa,	4

Sodium Bicarbonate—

Alicante,	30 kgs.
Amsterdam,	45
Antwerp,	75
Auckland,	20 bgs.
Barcelona,	27 brls.
Batoum,	195
Bordeaux,	20
Calcutta,	65
Cape Town,	790
Carril,	20
Catania,	5
Dansig,	20
Genoa,	20
Ghent,	12
Halifax,	250
Havre,	10
Hamburg,	8
Karachi,	100
Konigsberg,	45
Leghorn,	120
Libau,	80
Lyttelton,	642
Newfairwater,	200
Rangoon,	5
Santander,	30
Singapore,	16
Seville,	36 pks.
Smyrna,	140 kgs.
Varna,	70
Vancouver,	50 bgs.
Madras,	20
Malaga,	25 pks.
Messina,	20 kgs.
Melbourne,	100
Montreal,	420 brls.

Sodium Chlorate—

Montreal,	80 kgs.
Rotterdam,	120
St. Petersburg,	250

Sodium Hyposulphite—

Alexandria,	2 cks.
Callao,	30 kgs.
Havana,	5

Sodium Silicate—

Corunna,	8 brls.
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Sodium Sulphate—

Montreal,	24 cks.
Naples,	10

Starch—

Colombo,	12 cs.
Lisbon,	5 cks.
Para,	3
Rio de Janeiro,	20 brls.

Sulphur—

Savannah,	1 t.	£6
Montreal,	150	717
Boston,	150	649

Superphosphates—

Nantes,	118 t
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MANCHESTER.

Week ending July 7th.

Alum—	
Alexandria,	950 brls.
Aniline Colours—	
Hamburg,	10 cks. 2 cs. 5 kgs.
Aniline Oil—	
Hamburg,	3 dms.
Rotterdam,	10
Aniline Salts—	
Hamburg,	10 cks.
Anthracene—	
Rotterdam,	25 cks.
Caustic Soda—	
Alexandria,	30 dms.
Hamburg,	100
Chemicals (otherwise undescribed)	
Rotterdam,	5 cks.
Treport,	3 cs.
Antwerp,	20 kgs.
Copperas—	
Alexandria,	664 brls.
Glue—	
Rotterdam,	20 cks.
Lead Acetate—	
Hamburg,	1 ck.
Linseed Oil—	
Jaffa,	4 brls.
Logwood—	
Alexandria,	67 bgs.
Magnesium Chloride—	
Rotterdam,	4 cks.
Magnesium Sulphate—	
Rotterdam,	10 bgs.
Naphtha—	
Treport,	101 cks.
Nitrous Oxide Gas—	
Copenhagen,	12 btl.
Pitch—	
Antwerp,	6,163 c.
Tar Salts—	
Hamburg,	49 cks.
Toluol—	
Rotterdam,	19 dms.
Varnish—	
Treport,	1 ck.
Zinc Chloride—	
Rotterdam,	4 cks.

HULL.

Week ending July 3rd.

Alkali—	
Trieste,	34 dms.
Ammonium Sulphate—	
Stettin,	468 bgs.
Benzol—	
Marseilles,	1 kg.
Rotterdam,	25 cks.
Bleaching Powder—	
Norroping,	58 cks.
Stettin,	19
Caustic Soda—	
New York,	293 dms.
Chemicals (otherwise undescribed)	
Amsterdam,	59 cks. 25 pks.
Bremen,	9
Bergen,	5
Christiania,	4
Copenhagen,	23 6 cs. 40
Constantinople,	2 50 brls.
Gothenburg,	66 15 pks.
Hamburg,	5 261
Konigsberg,	5 brls.
New York,	15 25
Odessa,	42
Rotterdam,	2 50
Stettin,	10 2 pks.
St. Petersburg,	15
Venice,	20
Cottonseed Oil—	
Antwerp,	98 c.
Amsterdam,	605
Bremen,	367
Christiania,	4
Hamburg,	415
Marseilles,	920
Rotterdam,	338
Rouen,	137
Stettin,	148
Trieste,	122
Dye stuffs (otherwise undescribed)	
Christiania,	5 cks.
Genoa,	8 dms.

Stettin,	62 bgs.
St. Petersburg,	2 cks.
Glue—	
Gothenburg,	2 bls.
New York,	30 cks.
Linseed Oil—	
Alexandria,	41 c.
Antwerp,	64
Amsterdam,	101
Bergen,	116
Christiania,	1,886
Constantinople,	24
Copenhagen,	62
Drontheim,	35
Drontheim,	333
Hamburg,	69
Stavanger,	550
Trieste,	35
Manure—	
Genoa,	18 t.
Hamburg,	13
Naphtha—	
Marseilles,	38 cks.
Ochre—	
Hamburg,	2 cks.
Painters' Colours—	
Antwerp,	36 cks.
Amsterdam,	7
Bari,	12
Christiania,	15
Copenhagen,	20
Drontheim,	10 70 pks.
Fiume,	20 dms.
Ghent,	1 cs.
Genoa,	11 12 dms.
Gothenburg,	9 5
Marseilles,	7
New York,	25 75
Naples,	13
Odessa,	145
Rotterdam,	2
Rouen,	8
Stavanger,	100
Stockholm,	2
Stettin,	30
Pitch—	
Antwerp,	116 t. 94 c.
Rouen,	3 cks. 57 bgs.
Salt—	
Bergen,	3 cks. 57 bgs.
Soap—	
Drontheim,	500 cs.
Tallow—	
Amsterdam,	31 cks.
Dunkirk,	38
Gothenburg,	6
Tar—	
Amsterdam,	6 cks. 5 brls.
Copenhagen,	28
Dunkirk,	2
Genoa,	2
Hamburg,	17
Varnish—	
Antwerp,	4 cks. 3 brls.
Copenhagen,	1 cs.
Hamburg,	5
Marseilles,	1
Stockholm,	1

GLASGOW.

Week ending July 8th.

Albumen—	
U.S.A.,	£72. 10s.
Ammonia—	
Bremen,	143 t.
Ammonium Sulphate—	
Italy,	£291
Kingston, Jam.,	12 t.
Sicily,	45
Amsterdam,	76
Barbadoes,	81 7½ c.
Demerara,	240 2½
Trinidad,	245 2
Benzine—	
France,	£411
Bleaching Powder—	
Melbourne,	20 t.
Caustic Soda—	
U.S.A.,	30 t. 15½ c.
Chrome Ore—	
U.S.A.,	300 t.
Coal Products—	
Cresote Oil	£1,910
France,	
Naphthalene	
Riga,	£43
Pitch	
Calcutta,	£90
Civita Vecchia,	1,270

Portugal,	105
Spezia,	1,270
Canada,	279
U.S.A.,	120
Tar	
Calcutta,	£200
Madras,	£12. 10s.
Amsterdam,	50 brls.
Riga,	310
Danzig,	898
Rangoon,	£47
U.S.A.,	53
Coal Products (otherwise undes.)—	
Stockholm,	£420
Dextrine—	
New York,	22 t. 15 c.
Extracts—	
U.S.A.,	£233
Lisbon,	£98. 14s.
Lime—	
Antigua,	£25
Linseed Oil—	
Cape Town,	1 t. 18½ c.
Kingston, Jam.,	3 2½
Malta,	2 2½
Egypt,	2
Transvaal,	4,175 lbs.
Trinidad,	15
Logwood—	
Lisbon,	£50
Madder—	
Lisbon,	£26
Manganese Oxide—	
U.S.A.,	£165
Manure—	
Kingston, Jam.,	7 t.
Molasses—	
Amsterdam,	7 t.
Paint—	
Kingston,	18½ c.
Rotterdam,	£8. 10s.
Havana,	£145
Jamaica,	16
Painters' Colours—	
Cape Town,	qty.
Pt. Elizabeth,	£34
E. London,	
Paraffin Wax—	
Fiume,	£519
Trieste,	42
Pt. Elizabeth,	157
Stockholm,	150
Antwerp,	90
Potassium Bichromate—	
Italy,	£104
Rotterdam,	207
Stockholm,	203
Melbourne,	190
Potassium Cyanide—	
Townsville,	£1,717
Potassium Prussiate—	
Italy,	£409
Rosin—	
Calcutta,	£59
Salt—	
Trinidad,	12 t. 17½ c.
Sheep Dip—	
E. Ayres,	£77
Soap—	
E. London,	5 t.
Newfoundland,	3 16½ c.
Sodium Bichromate—	
Italy,	£74
Starch—	
Lisbon,	£27
Rotterdam,	10
Sulphuric Acid—	
Madras,	£42
Penang,	20
Rangoon,	1,698
Tallow—	
Rotterdam,	20 t. 9 c.
Treacle—	
E. London,	1 t. 10 c.
Aalesund,	18 2
Bergen,	12 8
White Lead—	
Natal,	£20
Zinc Ashes—	
Rotterdam,	£210

TYNE.

Week ending July 3rd.

Alkali—	
St. Petersburg,	35 t.
Amsterdam,	18 8 c.
Aluminous Cake—	
Montreal,	10 t. 10 c.

Ammonia—	
St. Petersburg,	6 t. 5 c.
Ammonium Carbonate—	
Odense,	1 t. 1 c.
Ammonium Chloride—	
St. Petersburg,	20 t. 7 c.
Barium Binoxide—	
Hamburg,	16 t. 12 c.
Barium Carbonate—	
Hamburg,	40 t.
Bleaching Powder—	
Riga,	60 t.
Antwerp,	5
Hamburg,	5
Odense,	8
Rotterdam,	12 13 c.
Copenhagen,	10 1
Abo,	30 7
Bergen,	30 16
Amsterdam,	26 7
St. Petersburg,	76 11
Caustic Soda—	
Gothenburg,	4 t. 18 c.
Antwerp,	9 17
Hamburg,	17 2
Bergen,	2
Abo,	10
St. Petersburg,	70 6
Hydrochloric Acid—	
Pomeroon,	2 c.
Lamp Black—	
Montreal,	8 c.
Linseed Oil—	
Montreal,	7 t. 15 c.
Litharge—	
Riga,	10 t.
Antwerp,	1 4 c.
Amsterdam,	12 cks.
Manganese—	
Antwerp,	6 t. 16 c.
Hamburg,	1 11
Paint—	
Antwerp,	10 c.
Hamburg,	2 t. 6
Bergen,	6
Soda—	
Antwerp,	5 t. 18 c.
Rotterdam,	14 2
Abo,	8 18
Amsterdam,	21 8
Soda Ash—	
Gothenburg,	45 t. 9 c.
Antwerp,	1 7
Sodium Sulphate—	
Aalborg,	2 t. 10 c.
Norholm,	200
Kristinehamn,	245
St. Petersburg,	20
Skutskar,	1,000
Sulphur—	
Gothenburg,	250 t.
Riga,	10 1 c.
Abo,	16
White Lead—	
Riga,	8 t. 5 c.
Copenhagen,	3 12

GOOLE.

Week ending June 30th.

Chemicals (otherwise undescribed)	
Amsterdam,	2 cks.
Coal Products (otherwise undes.)—	
Antwerp,	25 cks.
Ghent,	2
Rotterdam,	31 3 cs.
Dye stuffs (otherwise undescribed)	
Hamburg,	22 cks.
Manure—	
Ghent,	200 bgs.
Dunkirk,	89
Hamburg,	253
Heilig'haven,	2,134

GRIMSBY.

Week ending July 3rd.

Caoutchouc—	
Gothenburg,	2 bls.
Port au Prince,	1 cs.
Chemicals (otherwise undescribed)	
Antwerp,	400 bgs.
Dieppe,	4 cks. 1 sk.
Hamburg,	5 kgs. 1 cs. 5 pks.
Malmo,	2
Coal Products (otherwise undes.)—	
Antwerp,	8 btl.
Dieppe,	94 cks.
Hamburg,	2 8 cs.
Rotterdam,	1

PRICES CURRENT.

WEDNESDAY, JULY 14TH, 1897.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—

	£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/10½	& 8/9
Glacial		40/-	
Arsenic S.G., 2000°		1 4 0	
Fluoric	per lb.	0 0 3¼	
Muriatic (Tower Salts), 30° Tw.	per bottle	0 0 10	
(Cylinder), 30° Tw.		0 3 0	
Nitric 80° Tw.	per lb.	0 0 1½	
Nitrous		0 0 1¼	
Oxalic	nett	0 0 3½	
Phosphoric, 1750°		0 0 11½	
Picric		0 0 11	
Sulphuric (fuming 50 %)	per ton	15 10 0	
(monohydrate)		5 10 0	
(Pyrites, 168°)		3 0 0	
" 150°		1 5 0	
(free from arsenic, 145°)		1 7 6	
Sulphurous (solution) S.G. 1025		3 0 0	
Tannic (pure)	per lb.	0 1 2½	
Tartaric		0 1 1	
Arsenic, white powdered	nett per ton	22 0 0	
Alum (loose lump)		4 10 0	
Alumina Sulphate (pure)		4 2 6	
Aluminoferic		2 3 6	
Aluminium (Ingot metal 98/99¼ %)	nett	148 0 0	
Ammonia, Anhydrous	per lb.	0 1 3	
" 880=28° B.		0 0 2¼	
" =24° B.		0 0 1¼	
Carbonate	nett	0 0 3	
Muriate	per ton	18 0 0	
" (sal-ammoniac) 1st & 2nd	per cwt.	33/- & 31/-	
Nitrate	per ton	31 0 0	
Phosphate	per lb.	0 0 4½	
Sulphate (grey) London	per ton	7 10 0	
" (grey) Hull		7 10 0	
Aniline Oil (pure)	per lb.	0 0 6¼	
Aniline Salt		0 0 6¼	
Antimony	per ton	29 15 0	
(tartar emetic)	per lb.	0 0 9	
(golden sulphide)		0 0 10	
Barium Chloride	per ton	6 12 6	
Carbonate (native)		3 10 0	
Sulphate (native levigated)		42/6 to 65/-	
Bleaching Powder, 35 %	nett	6 7 6	
Liquor, 7 %		3 10 0	
Bisulphide of Carbon		12 0 0	
Chromium Acetate (crystal)	per lb.	0 0 6	
Calcium Chloride	per ton	2 2 6	
China Clay (at Runcorn) in bulk		15/- to 30/-	

Coal Tar Products and Dyes:—

Alizarine (artificial) 20 %	nett per lb.	0 0 6¼
Magenta		0 3 0
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0 0 6½
Benzol, 90's	per gallon	0 2 3
50/90		0 2 2
Carbolic Acid (crude 60°)	per gallon	0 1 11
(crySTALLISED 40°)	per lb.	0 0 7½
(liquid 95/97%)	per gallon	1 0
Creosote (ordinary)		0 0 2
(filtered for Lucigen light)		0 0 2½
Crude Naphtha 30 % @ 120° C.		0 0 11
Grease Oils, 22° Tw.	per ton	2 15 0
Pitch, f.o.b. Liverpool or Garston		1 1 0
Solvent Naphtha, 90 % at 160°	per gallon	0 1 6½
Copper	per ton	47 15 0
Sulphate		16 0 0
Oxide (copper scales)		44 10 0
Glycerine (crude)		30 0 0
(distilled S.G. 1250°)		60 0 0
Iodine	nett, per oz.	0 0 7½
Iron Sulphate (copperas)	per ton	1 10 0
Sulphide (antimony slag)		2 0 0
Lead (sheet) for cash		13 7 6
Litharge Flake (ex ship)		14 15 0
Acetate (white)		21 15 0
" brown		15 0 0
Carbonate (white lead) pure		16 15 0
Nitrate		19 0 0

Lime, Acetate (brown) (ex ship)	per ton	4 15 0
" (grey) (ex ship)		8 5 0
Magnesium (ribbon and wire)	per oz.	0 2 2
Chloride (ex ship)	per ton	2 10 0
Carbonate	per cwt.	1 17 6
Calcined Magnesia	per ton	9 0 0
Sulphate (Epsom Salts)	per ton	2 15 6
Manganese, Sulphate		16 0 0
Borate	per cwt.	2 10 0
Ore, 70 %	per ton	3 10 0
Methylated Spirit, 61° O.P.	per gallon	0 1 8
Naphtha (Wood), Solvent		0 2 9
" Miscible, 60° O.P.		0 3 6

Oils:—

Cotton-seed	per ton	15 10 0
Linseed		16 5 0
Stearine	per ton	19 10 0
Phosphorus (yellow)	per lb.	0 2 2
(red)		0 2 8
Potassium (metal)	per oz.	0 3 7
Bichromate	nett per lb.	0 0 4½
Carbonate, 90% (ex ship)	per ton	16 10 0
Chlorate	per lb.	0 0 4
Cyanide, 98%		0 0 9¼
Hydrate (Caustic Potash) 90 %	per ton	3 15 0
" (Caustic Potash) 75/80 %		20 10 0
" (Caustic Potash) 70/75 %		19 15 0
Nitrate (refined)	per cwt.	1 1 6
Permanganate	per cwt.	3 15 0
Prussiate Yellow	per lb.	0 0 5½
Sulphate, 90 % (ex ship)	per ton	9 15 0
Muriate, 80 % (do.)		8 10 0
Silver (metal)	per oz.	0 2 3½
Sodium (metal)	per lb.	0 2 11
Carb. (refined Soda-ash) 48 %	nett per ton	4 15 0
" (Caustic Soda-ash) 48 %		4 5 0
" (Carb. Soda-ash) 48 %		4 0 0
" (Alkali) 58 %		3 17 0
" (Soda Crystals)		2 5 0
Acetate (ex-ship)		12 5 0
Arseniate, 45 %		14 7 6
Chlorate	per lb.	0 0 4¼
Borate (Borax)	net, per ton	14 15 0
Bichromate	per lb.	0 0 3¼
Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton		8 17 6
" (74 % Caustic Soda)		8 0 0
" (70 % Caustic Soda)		7 2 6
" (60 % Caustic Soda)		6 2 6
" (pure liquor 90° Tw.)		3 12 6
" 77/78 % powdered (99 % hydrate)		12 15 0
Bicarbonate		6 10 0
Hypo-sulphite		5 0 0
Manganate, 25%		15 0 0
Nitrate (95 %) ex-ship Liverpool	per cwt.	0 7 6
Nitrite, 98 %	per ton	30 0 0
Phosphate		10 10 0
Silicate (glass)	per ton	4 10 0
" (liquid, 100° Tw.)		3 10 0
Stannate, 40 %	per cwt.	3 2 9
Sulphate (Salt-cake)	per ton	0 19 0
" (Glauber's Salts)		1 7 6
Sulphide		6 15 0
Sulphite		5 0 0
Strontium Hydrate, 100%		10 15 0
Sulphocyanide Ammonium, 95 %	per lb.	0 0 6
Barium, 95 %		0 0 4½
Potassium		0 0 6¼
Sulphur (Flowers)	per ton	7 10 0
(Roll Brimstone)		6 10 0
Brimstone: Best Quality		4 12 6
Superphosphate of Lime (26%)		2 5 0
Tallow		18 0 0
Tin Crystals	per lb.	0 0 4¼
English Ingots	per ton	66 0 0
Zinc (Spelter)		17 0 0
Chloride (solution, 100° Tw.)		4 17 6
Sulphate, Crystal		5 2 6

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No. 531.

SATURDAY, JULY 24, 1897.

Vol. XXI.

Contents.

PAGE	PAGE
Current Topics	49
The Salford Sewage Case	50
Imports and Exports for June	50
The Patent List	51
Abstracts of Latest Complete Specifications	51
The Clippens Oil Company's Dead-lock	51
Artificial v. Land Filtration of Sewage	51
Ribble Joint Committee	52
The Manuring of Wheat and Barley Crops	52
Society of Chemical Industry	53
Our Book Shelf	54
Restricting Nitrate Production	54
Exports of Alkali and Bleach	54
Legal Intelligence	55
Sewage Defence Committee	55
The Pollution of the Derwent	56
Important Pipe Line Decision in the States	56
Trade Notes	56
Tar and Ammonia Products	56
Miscellaneous Chemical Market	56
Report on Manure Material	56
Liverpool Oil and Colour Market	57
The Metal Markets	57
Hull Paint, Oil, and Colour Report	57
West of Scotland Chemicals	57
Tyne Chemical Report	57
New Companies	58
Imports	58
Exports	61
Prices Current	64

LATE ADVERTISEMENTS.

SULPHIDE OF IRON for Sale, very good quality. Inquiries solicited.—John Nicholson and Sons, Limited, Chemical Works, Hunslet, Leeds.

WANTED, by Young Man, Situation as Foreman. Nitric Acid, Muriatic Acid, Sulphuric Acid, Nitro Benzole and Toluole, Binitro Benzole and Toluole, Myrbane.—Address, "Nitros," Chemical Trade Journal Office, Manchester.

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Articles, reports, and correspondence on all matters of interest to the Chemical and allied industries, home and foreign, are solicited. Correspondents should condense their matter as much as possible, write on one side only of the paper, and in all cases give their names and addresses, not necessarily for publication. Sketches should be sent on separate sheets.

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Trade Advertisements, Announcements in the Directory Columns, and all Advertisements not prepaid, are charged at the Tariff Rates, which will be forwarded on application.

Advertisements intended for insertion in the current week's issue should reach the office by **Thursday morning** at the latest.

CURRENT TOPICS.

FINAL DECISIONS IN THE U.S.A. TARIFF.

THE passing of the new Tariff Bill in America is now hourly expected, and it will become operative as soon as it has been passed.

There are, however, several changes that have resulted from the prolonged and heated debate on certain sections, several of which had a bearing upon the chemical trade.

The duty on bleaching powder has now been definitely settled at $\frac{1}{4}$ cent per lb. The fight over the soda ash duty was a keen one, the settlement of this point having been looked upon as one of the knottiest problems in the chemical schedule. Any change from the quarter cent duty levied under the McKinley and Wilson Bills was stoutly resisted, it being shown that even this duty brought in a revenue of over £130,000. a year, but all arguments were unavailing, and the $\frac{3}{4}$ cent per lb. duty was finally settled on, this being equal to a protective duty of 185% on an article largely used in American industries. To this paragraph sodium arseniate at $1\frac{1}{4}$ cent per lb. has been added, being a change from 25% *ad valorem*.

The following are changes that have been made since our abstract of the Senate Bill appeared in issue No. 525:—

The valuation of glue products now stands thus: Valued below 10 cents per lb. (instead of 7), $2\frac{1}{2}$ cents duty; between 10 and 35, the old duty holds good.

Blues containing ferrocyanides have been advanced from 6 to 8 cents per lb. Washed or pulverised ochres, $\frac{1}{4}$ cent per lb. Zinc oxide pigments containing no lead and in the dry state are charged 1 cent instead of $1\frac{1}{4}$ cents; ground in oil, $\frac{3}{4}$ cent. White sulphide of zinc carries $1\frac{1}{4}$ cents per lb. Phosphorus has been advanced to 15 cents, and chlorate of potash to $2\frac{1}{2}$ cents per lb. Under general soda compounds the hyposulphite and sulphide are placed at $\frac{1}{2}$ cent each. Potassium cyanide will pay $12\frac{1}{4}$ % *ad valorem*.

Touching the free list, the effort to include Epsom salts has failed, and a duty of one-fifth cent per lb. has been adopted. Crude sulphur has been left on, while sheep dip has also been included, but metallic sodium has been struck off.

BRITISH TRADE ABROAD.

With the prospect of a restrictive tariff in the States, it is an opportune moment for the subject of developing our foreign trade to be discussed. There are already many trade papers that present in readable form the information contained in consular reports, and one new paper, we believe, has devoted itself to this task entirely, but there is ample room for increased despatch and utility in the reports themselves.

To this end, among others, a special inquiry committee has been appointed by the Board of Trade, comprised of the following gentlemen:—Sir Courtenay Boyle, K.C.B. (chair-

man), the Hon. Sir H. Stafford Northcote, C.B., M.P., Sir Henry Bergne, K.C.M.G., Mr. S. E. Spring-Rice, C.B., and Mr. A. E. Bateman, C.M.G.

The committee has been instructed to consider and advise as to the best means of bringing to the knowledge of the home trades the information furnished by consuls and commercial attachés, and by agents-general and other representatives of colonial Governments and of India as to the supply and demand and other conditions of the markets in their respective districts; and as to the opportunities which they afford for the introduction and development of British trade.

They will also report whether it is, in their opinion, desirable that consuls and agents should be instructed to remit from time to time samples of goods most in demand in such markets; and, if they come to this opinion, will advise as to what arrangement should be made for the exhibition of such samples in London or for their circulation with the aid of chambers of commerce to the provincial trade centres, with information as to price and other conditions under which they are supplied.

Such a committee should prove capable of making some valuable suggestions, and it is only to be hoped that their deliberations will be carried out with as much celerity as is compatible with accuracy. It is possible sometimes to sacrifice too much in fathoming the accuracy of *minutiae* when judging commercial questions of this nature.

THE SALFORD SEWAGE CASE.

AT the Salford County Court, on Thursday this week, before his Honour Judge Parry, the case of the Mersey and Irwell Joint Committee against the Salford Corporation again came on for hearing. It was in the form of a summons calling upon the Corporation to show cause why a peremptory order should not be made upon them under section 10 of the Rivers Pollution Prevention Act, 1876, requiring them forthwith to abstain from polluting the Ship Canal with sewage matter contrary to the provisions of the Act. This would make them liable to a penalty of £50, a day for every day after such order until the abatement of the nuisance. Mr. Sutton appeared on behalf of the Joint Committee, and Mr. L. C. Evans represented the Salford Corporation.

Mr. Evans explained that the proceedings had been adjourned since the 28th of last month in order to enable the Corporation to pass a resolution authorising the borrowing of the money required for the purpose of carrying out their sewage scheme. That resolution had since been passed, so that he thought the question would now be one of allowing the Corporation sufficient time to carry out the work.

Mr. Sutton agreed that that was so, but said the committee felt they should have some control in the matter, so that they might be sure that the contracts were let in reasonable time.

His Honour was also of the opinion that the matter should not pass out of the control of the committee.

Mr. Evans submitted that the proper course would be for the Corporation to report to the Court.

His Honour said the best way would be for the Corporation to keep the Joint Committee acquainted with the steps they were taking. Then the committee could at any moment apply for the penalties to be enforced if the work was not carried out. It was obvious to him that the Corporation were really doing their best to carry out what they considered to be the right scheme.

Mr. Evans said that the details of the scheme had not yet been absolutely arranged, but he would call the borough engineer to say what time would be necessary to enable the Corporation to prepare these details.

Mr. T. Corbett, borough engineer, said that if all the contracts were to be let in one group it would take him six months, even with extra assistance, to get all ready. But it would perhaps be more convenient to let the contracts seriatim, and proceed step by step. In that case they might get the first contract let well within six months. The contracts they proposed to let in the first place were for five acres filtration. If the Corporation backed him up all the contracts for the work might practically be let in eight months' time, and a further period of 18 months would be required to complete the work, if the present system was to be kept going all the time.

His Honour suggested that the case should be further adjourned, and that the Corporation furnish the Joint Committee from time to time with the particulars of what they were doing, the Committee having liberty to apply to the Court at any time. It should also be distinctly understood that if for any reason the Corporation were unable to carry out the work, there would be no alternative so far as that Court was concerned but to impose penalties. So far everything had been done to meet the Corporation, and he (the Judge) would always be willing to meet them so long as they kept moving. If they did not keep moving there would be no alternative. He would let the matter stand in the way he had suggested, because his desire was to assist the Corporation as far as possible in their very important work, and he was sure that was also the desire of the Joint Committee. It would be with the greatest regret if he had to impose penalties, but he hoped there would now be no necessity for any further proceedings.

Mr. Evans said he thought the delay which had existed up to the present was due to the Local Government Board.

His Honour said that whilst he had nothing to do with that, he saw there had been a deal of correspondence on the subject.

The case was then adjourned indefinitely on the terms mentioned by the Judge.

IMPORTS AND EXPORTS FOR JUNE.

THE Board of Trade returns for the past month have again been satisfactory. In the *imports* oils show an increase in value, but chemicals are less. Among the *exports* alkali shows an increase and colours a decline.

IMPORTS OF FOREIGN AND COLONIAL PRODUCE.

ARTICLES.	Quantities.	
	1896.	1897.
Margarine	Cwt. 64,030	70,999
Copper Ore and Regulus	Tons. 9,632	16,241
Pyrites	" 47,792	47,356
Tin	Cwt. 45,170	47,768
Alkali	" 18,715	28,325
Brimstone	" 12,858	44,100
Dyes, Coal Tar	£. 60,340	48,935
Saltpetre	Cwt. 25,576	38,331
Petroleum	Gall. 13,191,061	14,431,962
Turpentine	Cwt. 53,354	29,082
Guano	Tons. 6,669	1,075
Nitrate of Soda	" 6,295	8,948
Paraffin	" 56,222	48,847
Rosin	Cwt. 146,155	192,984
Tallow and Stearine	" 219,117	246,330
Oil Seed Cake	Tons. 22,845	33,732
Wood Pulp	" 27,180	37,388

EXPORTS OF BRITISH AND IRISH MANUFACTURES.

ARTICLES.	Quantities.	
	1896.	1897.
Alkali	Cwt. 368,448	440,186
Cement	Tons. 36,324	32,138
Coal and Coke	" 3,264,315	3,082,214
Copper, all kinds	Cwt. 73,501	66,321
Iron and Steel	Tons. 350,575	317,309
Chemical Manures	" 20,117	18,902
Oils, seed	" 4,583	4,216
Salt	" 63,709	47,221

HOLIDAY RESORTS AND GUIDES.—Two artistic folders have been prepared by the North Eastern Railway Company for the use of passengers travelling by the East Coast Route to the Tourist Resorts in the North of England and Scotland. The smaller of the folders contains a number of illustrations, as well as a map of the principal towns on the East Coast route reached by the Great Northern, North Eastern and North British Railways. Special attention is given to a description of the Luncheon and Dining Car Corridor Trains, and in the inside of the folder is a comprehensive time table. The larger folder gives full details of the special Circular and other tours on the Systems of the three Companies, illustrated with views of places. This folder likewise contains a large map of England and Scotland, shewing the routes to be taken. They can be obtained free on application to the Superintendents of the Line at King's Cross, York and Edinburgh (Waverley), or at any of the Receiving Offices in London, Edinburgh, Glasgow, etc.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

- Disinfectants from Bye-products in Making Camphor Substitutes. W. Smith and J. E. T. Woods. 15,927. July 5.
 A Disinfecting and Bleaching Soap Powder. C. Romen. 15,972. July 5.
 Treatment and Production of Phosphates. E. M. Polet. 15,976. July 5.
 Production of Ozone. P. Pascal. 16,029. July 6.
 Glass Melting Plant. E. F. W. Hirsch. 16,062. July 6.
 Extracting Sludge from Sewage, etc., Tanks. E. W. Ives. 16,103. July 7.
 Improvements in the Manufacture of Drying Oils, Varnishes, etc. S. Rosenblum and S. Rideal. 16,147. July 7.
 Bleaching Vegetable Fibres, etc. J. H. Gartside. 16,191. July 8.
 Apparatus Indicating Percentage of Air in Furnace Gases. C. Day. 16,192. July 8.
 New Explosive. G. de Wolf. 16,206. July 8.
 Dust Preventing Compound. W. Thomson. 16,257. July 9.
 Smoke-consuming Apparatus. J. Seedhouse, senr., and J. Seedhouse, junr. 16,346. July 10.
 Soaps and Cleansing Compositions. F. Becker and O. Wolff. 16,382. July 10.
 Calcium Carbide Furnace. R. Haddon. 16,398. July 10.
 Asbestos Fabric. I. Blockner and M. Temesváry. 16,412. July 10.

ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

These abstracts are specially prepared for the Chemical Trade Journal, and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.

Improvements in or Relating to Machinery or Apparatus or Treating Myrabolams for obtaining Extracts therefrom. S. Smithson, Bright's Cottage, Heckmondwike. Eng. Pat. 12,399. May 19, 1897.

Various forms of extraction apparatus are described and illustrated by four drawings. They are both of the revolving and stationary types. In the former the inner periphery of the revolving horizontal cylinder is provided with plates or blades which carry the myrabolams above the level of the water which partially fills the cylinder. Reciprocating pistons pound the material before it is discharged from the plates back into the water. In the stationary tanks the dyewood is carried on a false bottom, and the water is heated by steam coils, lying under it.

An Apparatus for Purifying Bay Salt. A. MacNab, 23, Great Winchester-street, London (communicated by W. J. Hadden, East Coast Railway, Woltah, Madras Pres., India). Eng. Pat. 10,078. April 22, 1897.

The brine and bay salt are run into a horizontal closed cylinder in which a central shaft carries alternately propeller blades and solid discs in the edges of which are slots. When the shaft is revolved the propellers force the material continually to one end of the cylinder, whence it forces its way back through the slots in the discs. The crystals are thus pulverised and well washed. The contents are then discharged through a wide bore cock into the settlers. There are 3 figures.

Improvements in Presses for Filtering Sewage. W. T. Whitehead and J. Wolstenholme, Albert Works, Radcliffe, Lancs. Eng. Pat. 12,735. June 10, 1896.

In pressing sewage the cloths are forced into the corrugations of the press-plates so that the filtered liquid portion runs off very slowly. One or more perforated steel plates are therefore interposed to support the cloths and so keep the channels formed by the corrugations open for the escape of the filtered sewage. There are four figures showing the method of fixing the plates.

Improved Means for Producing Carbonic Acid and Hydrogen Gases. B. T. L. Thomson, 85, North Side, Clapham Common. Eng. Pat. 17,778. August 11, 1896.

The gases are formed by passing steam in excess over heated carbon, in accordance with Patent 6,835/96, only the separation is effected by forcing the gases into water or a solution of an alkaline carbonate, thus absorbing the carbon dioxide, while the hydrogen and traces of carbon monoxide can be drawn off. The latter is removed, if necessary, by passing the hydrogen through cuprous chloride solution. The carbon dioxide is recovered, after separation, in any of the usual ways.

Improvements in and Relating to the Treatment of Zinc Ores, or Ore-residues, in the Production of Zinc, Chlorine, Sodium Sulphate and other Products. Dr. H. Brewer, 5, Grünstrasse, Duisburg, Germany. Eng. Pat. 17,839. August 12, 1896.

After treating the ores by roasting, chlorination, and leaching, instead of adding calcium chloride to the liquor so obtained to convert the soda salts into chlorides as described in patent 1,348/95, it is desirable sometimes to obtain part of the soda salts as sulphate. To do this, instead of adding calcium chloride to the lye obtained after the foregoing treatment, the lye is saturated with salt, which assists the separation of the sulphate on cooling. The mother liquor is then treated with calcium chloride to change any other sulphates into chlorides. Iron is precipitated with calcium carbonate, and the lye then evaporated to a suitable strength for electrolysis. By this treatment the difficulties of evaporating iron chloride lyes is also avoided.

Improved Manufacture of Waterproof Glue. H. Gardner, 166, Fleet-street, E.C. (communicated by C. W. Luther, Reval, Russia). Eng. Pat. 21,774. October 1, 1896.

Casein, albumen, blood or gluten are treated with alkalies, such as hydrates of lime, potash or soda, etc., forming a glue. By using an excess of alkali the glue becomes insoluble in water on standing. If but little alkali is used the process of setting is hastened by heating after the pieces of wood or what-not have been united.

THE CLIPPENS OIL COMPANY'S DEADLOCK.

IN consequence of the position of affairs which matters have assumed in the dispute between the Clippens Oil Company (Limited), Straiton, Mid-Lothian, and the Edinburgh and District Water Trust, the former company on Saturday carried out the resolution come to by their directors to close the shale mines and oil works pending the decision of the Court as to the right of the Clippens Company to work the minerals in certain portions of the district at and near to the water track of the Trust. Until lately employment has been found for 1,000 or 1,200 men altogether, who were housed in the company's property at Straiton and at Loanhead, Burdiehouse, and district. For the most part these workmen must forthwith quit the district, though, so far as the Clippens Company are concerned, they have, through their general manager, Mr. James Armour, expressed a willingness to do all within their power to facilitate the convenience of the families. A considerable number of the men are being engaged by several of the coal companies in Edinburghshire and East Lothian, and many others are quitting the district to search for employment in Stirlingshire and the West of Scotland. The retort men are naturally going where there are similar works. The shopkeepers in Loanhead district are greatly disappointed at the course the Water Trust have adopted. Lately at a public meeting of the inhabitants the Trust were called upon to modify their demands in the interests of the company, but to no purpose.

ARTIFICIAL v. LAND FILTRATION OF SEWAGE. DEPUTATION TO THE LOCAL GOVERNMENT BOARD.

TWO deputations waited on Mr. T. W. Russell, the Parliamentary Secretary to the Local Government Board, on Wednesday. The first was from the Lancashire County Council to ask for an extension of the time of the Lancashire Highways Boards, which would nominally expire on December 29th, to the extent of five years. If the extension is not granted, the powers will be transferred to the District Councils. The deputation was introduced by Sir J. Hibbert, and amongst those present were Mr. W. W. Hulton, chairman of the Main Roads Committee; Mr. J. E. Shepherd, vice-chairman; and Mr. C. H. Sadler, Deputy Clerk of the Peace. The other deputation was from the Mersey and Irwell Joint Committee, represented by Sir John Hibbert (chairman of the Committee), Sir Henry Roscoe (chemical adviser), Mr. J. Brierley, Dr. Hewitt, and Mr. R. A. Tatton (chief inspector). The object of this deputation was to present the report of Sir Henry Roscoe and Mr. Tatton on the subject of artificial filtration.

Mr. Russell, in replying to the first deputation, said he had received deputations from three other counties asking for similar concessions, but the Local Government Board had not given them anything like five years. He had seen the President of the Local Government Board before he came, and what he was inclined to agree to now was that with one exception a postponement should be granted to the 31st of March, 1899. Replying to the Mersey and Irwell deputation, he recognised the importance of the matter, but it could not be decided off-hand. He had been down to Lancashire to see some of the purifying works for securing artificial filtration. The whole subject of dealing with the sewage of such large centres of population required special inquiry. The suggestions of the deputation should have the consideration of the officials and the President of the Local Government Board.

RIBBLE JOINT COMMITTEE.

A MEETING of this Committee was held last week at the County Offices, Preston, Alderman Thos. Burrow presiding. Representatives had been invited to attend the meeting from Ince Urban District Council, to show cause why proceedings should not be taken against that authority for offences against the Rivers Pollution Prevention Act, 1876, and nine gentlemen attended as a deputation. Mr. Ellis, who acted as their spokesman, argued that the Ince Council had adopted the best practical means within the meaning of the Act to prevent this nuisance. The adoption of another system to that in use would mean an increase of 6d. per pound on the existing rate. He explained that their analyst and Mr. Naylor, the chief inspector, were not agreed as to the nature of the effluent, and the Ince Urban Council did not wish to be made the victim of a difference of opinion between chemists, but would like the Committee to have this matter settled by the adoption of some uniform method of taking tests.—The Chairman said the Committee had taken samples in April last with a view to a test, and had not received any reply from Ince Council as to their tests.—Mr. Ellis said the Ince Council had not understood that these samples were intended as tests. It appears that the results of the Ince analyst differed from Mr. Naylor's results in March last, and the clerk wrote the Ribble Joint Committee saying their analyst was backed up by an independent analyst. Mr. Naylor was then instructed to take fresh samples, submitting to independent analysts, and leaving duplicates with the Ince Urban District Council representatives. It has since transpired that the independent analyst acting for Ince in the first case received three samples, the first 14 weeks old, the second 11 weeks old, and the third five weeks old. In the first two cases his results were lower than those of the Ince analyst and Mr. Naylor, while in the third and only reliable case, five weeks old, he agreed with Mr. Naylor was 100 per cent. higher than the Ince analyst. In regard to the second case (when duplicates were left by instruction), the Ince analyst did not get independent analyses, but only did them himself. Mr. Naylor submitted his samples to Dr. Hill and Dr. Dupré. The results of Mr. Naylor and Dr. Dupré agreed exactly. Dr. Hill's were a little higher than both, whereas the Ince analyst's were again lowest by a considerable amount.—The Rev. Mr. Fletcher moved that the matter stand over for a month, and that meanwhile the two analysts decide upon some common method of testing the samples.—The Chairman informed the deputation that the interests of their Council would not be served by playing hide and seek with the Committee.—Mr. Ellis disclaimed any such intention.—The adjournment was agreed to.

A deputation from Blackburn attended with reference to the sewage turned into the River Darwen from Blackburn Sewage Works. The Town Clerk asked a further delay, as they wished to make inquiry into the bacteria process. Their great desire was to arrive at exactly the best system of purification, as they did not wish to adopt a system which might in three or four years be superseded by a much more effective and less expensive process. They asked to be allowed a reasonable and proper amount of time to make experiments and satisfy themselves as to the best process, and meanwhile the best possible use would be made of the process at present in existence, so far as to prevent as far as possible any nuisance arising.—The matter was adjourned for three months.

With reference to Colne Municipal Borough, the Chief Inspector reported that since the last adjournment three months ago, the re-draining of the land had been completed with beneficial results. More tank space was still necessary and improved apparatus for satisfactory sludge pressing. The consent of the Local Government Board had been obtained for a loan to carry out the work, which, he was informed, would be proceeded with at an early date. The sewer had been extended to Belgrave to take in the sewage from the houses there, and the sewer near the refuse tip coupled to the main. The samples of effluent showed a decided improvement.

It was reported that the tanks, filters, mixing, and pressing machinery at the Coppy Clough outfall works of the Accrington and Church Joint Board were now ready to be used.

In the cases of Messrs. Whipp and the Indian Mill Co., Church, adjourned in March last for four months, the Church Urban District Council acknowledged its responsibility for the treatment of the waste from these mills. Plans have been prepared for the construction of a sewer and lifting appliance.

In the Blackburn Rural District the construction of sewers and sewerage disposal works was reported by the chief inspector to be proceeding satisfactorily. Attention was called to the necessity for provision of some scheme for dealing with the sewage from Billington and Langho.

The scheme for the treatment of the Croston sewage has been objected to by the Local Government Board. Another scheme is now being prepared which will overcome their objections.

THE MANURING OF WHEAT AND BARLEY CROPS.

A COMPARISON OF NITROGENOUS MANURES.

THE Woburn Experimental Farm, which by the generosity of successive Dukes of Bedford has been placed at the disposal of the Royal Agricultural Society for investigations concerned with the growth of farm crops and the feeding of farm animals, has now been in operation for 20 years. The present time is therefore deemed suitable for taking a general survey of the work which has been done, and the value of which is greatly enhanced by the fact that it has been continuous year after year. A general description of the farm and of the experiments that have been undertaken is accordingly contributed by Dr. Voelcker to the Society's "Journal," whilst a detailed account is given of the permanent wheat and barley experiments, both of these cereals having been grown for 20 consecutive years upon a series of plots which have been variously manured, though the treatment of each individual plot has been the same year after year. Without entering into the details of the investigations we may, for the information of corn-growers, give the following summary of the conclusions which have been arrived at:—

1. That both wheat and barley can be grown perfectly well year after year on the same land if only the proper manures be applied. Whether or not this continuous corn-growing would be profitable is, however, another matter, and must depend upon the market prices of corn and straw and the cost of manures. But the experiments supply the data for calculating what the result would be under any particular circumstances, and also what would give the most profitable result.

2. If land be kept clean it may continue to produce moderate crops of wheat and barley for a number of years, though no manure whatever be used. The exhaustion of the land under such circumstances goes on but very gradually.

3. It is useless to apply mineral manures alone for either wheat or barley.

4. Nitrogenous salts, such as sulphate of ammonia and nitrate of soda, have a great influence upon both the wheat and barley crop. This is especially marked with barley. Still, it is not good to use nitrogenous salts alone, for the crops are not healthy, and the result of the continuous application of the salts is to deprive the soil of its mineral ingredients, more particularly the lime. This exhaustion is experienced sooner with barley than with wheat, and sooner with ammonia salts than with nitrate of soda.

5. The proper manuring for wheat and barley crops is the application of mineral manures along with moderate amounts of nitrogenous manures. Minerals are essential, though not efficacious by themselves.

6. The quantity of nitrogenous salts (sulphate of ammonia or nitrate of soda) which it will pay to apply along with minerals depends upon current market prices. As a rule it is not safe to use more than that which yields 50 lb. ammonia per acre (say, 2 cwt. of sulphate of ammonia or $2\frac{1}{2}$ cwt. nitrate of soda per acre). With double these amounts the limit of productive capability is reached, and the crop is very liable to "go down."

7. Whether sulphate of ammonia or nitrate of soda be the better to use is mainly a matter of season and of relative price. In a wet season sulphate of ammonia does better for wheat, in a dry season nitrate of soda. Over a number of seasons there is little to choose between the two salts, and the one in which the nitrogen can be bought the cheaper is the better to use. In the case of barley, season does not appear to influence the result materially. If nitrogen costs the same in the two salts use, for choice, sulphate of ammonia for wheat and nitrate of soda for barley. Nitrate of soda produces the more straw.

8. Nitrogenous salts only last for the year of their application. Sulphate of ammonia leaves more residue than nitrate of soda in the case of a wheat crop. With a barley crop there seems to be but little difference. Both salts leave more residue after barley than after wheat. For practical purposes, however, the influence of these salts does not extend beyond the year of their application, even though minerals be applied freely.

9. Organic manures, like rape cake, do well for both wheat and barley on light land, and produce a result almost equal to that of farmyard manure supplying double the amount of ammonia. They also take a considerable time to work out from the land.

10. Farmyard manure is of little use in small quantities, but applied in quantity (giving, say, 200 lb. of ammonia per acre and consisting of about seven or eight tons of well-made cake-feeding) will do very well on light land, especially in a dry season. The result is not, however, equal to that from using minerals and nitrogenous salts. Farmyard manure, if thoroughly rotted, can be quite well spread as a top-dressing on light land, and need not be ploughed in. The crop produce is kept up from season to season, without falling off, by the application of farmyard manure. After farmyard manure at the rate of seven or eight tons per acre has been put on for a few years in succession it may take about 15 years to exhaust it entirely.

SOCIETY OF CHEMICAL INDUSTRY.

VISIT TO THE WORKS OF MESSRS. LEVINSTEIN LTD.

ON Saturday last the annual meeting of this Society was practically brought to an end by the visit of about fifty members to the above works at the invitation of Ivan Levinstein, Esq., the managing director. Among those who visited the works were Dr. Affleck, Dr. Bailey, Dr. Guttman, Dr. Lewkowitsch, Dr. Perkins, Alderman Hoy, and Messrs. Aitken, A. H. Allen, Geo. E. Davis, Stevenson Macadam, M. Muspratt, W. Smith, W. Thomson, Thos. Tyrer, and others.

Before beginning the tour round the works, Mr. Levinstein stated that his intention was to divide the programme into three parts. First, to visit the plant devoted to the production of raw materials, such as sulphuric, nitric, and acetic acids, naphthalene, naphthol, naphthylamine, etc., which were the specialties of the works; then the secondary products from which the colouring matters were made; and, thirdly, to show them the actual manufacture of the colours themselves. He laid special emphasis on the fact that while the manufacture of the colours themselves was simplicity itself, the difficulty was to produce the secondary products just referred to in a sufficiently pure state. The Company make a specialty of naphthalene derivatives, of which they are the largest manufacturers in Europe, two-thirds of the production being supplied to German colour manufacturers.

As the party proceeded to the inspection of the vitriol plant, attention was drawn to a large number of casks containing naphthalene derivatives intended for Germany, all of which were conspicuously marked "Made in England," a fact which seemed to afford considerable amusement and satisfaction to the visitors.

The vitriol plant, which had been designed by Mr. Geo. E. Davis, was producing 100 tons of acid per week, all of which was used on the works. The rectifying plant is constructed on the Company's own patents, and was rectifying the chamber acid up to 96%, 97%, and 98% acid. Glass retorts are used. The remarkable freedom of the retort house from the irritating fumes of sulphuric acid was the subject of remark by several of the visitors, and Mr. Levinstein added that remarks to the same effect were made either by the District or the Chief alkali inspector whenever he visited the works. He explained that Spanish pyrites were being used, and how both the copper, iron, and precious metals contained in the ore were recovered by outside manufacturers who purchased the ore from them after the sulphur had been burnt out.

At this point, Mr. Levinstein drew attention to a notable feature of the works, namely, that there was no transport or handling of vitriol in carboys throughout the works, but the acid was collected in a central cistern near the rectifying house and was forced by means of air pressure and acid eggs into secondary reservoirs, situated in the various departments, where it was simply necessary to draw off into measuring boxes the required amount of acid for the individual operations. Wrought iron pipes were used for the transport of the acid, and were preferable on account of their lightness for the overhead transport of the acid. The present installation had been in use six years, and was still fit. After the nitric acid plant, which was of the usual type, though characterised by several minor conveniences in regard to arrangement, had been visited, the inspection of the plant for the manufacture of the organic products was proceeded to.

The naphthalene stills were first visited. These are charged with naphthalene from a separate store, and are wholly separated from the condensing and rectifying plant, thus minimising the risk of fire which always attends the distillation of this product. Between 400,000 and 500,000 pounds are rectified a month, the product obtained from the first distillation being subsequently twice distilled, finally refined, and crushed, when it is ready for use in the various departments.

The plant for the manufacture of nitro-naphthalene was next visited, the importance of preventing the formation of the di-nitro product was explained by Mr. Levinstein, who stated that 180,000 to 200,000 lbs. of the nitro-compound were produced a month. Proceeding, the party passed through the reduction house, where the nitro-compound is reduced with hydrogen (obtained from iron filings and hydrochloric acid) to form naphthylamine. On reaching the plant in which this product is refined, Mr. Levinstein drew special attention to the absence of smell, and those who were familiar with the revolting stench of this product were greatly interested to know how such a satisfactory result was obtained. It appears that the distillation is now wholly conducted by means of a most elaborate plant under a vacuum, thus suppressing all the smell. It is interesting as well as instructive to note that this firm produce as much naphthylamine as any three German manufacturers.

In the next department visited the process has to be carried on in retorts under a pressure of a ton to the square inch, and the elaborate precautions and tests made to ensure the safety of those working in this department were explained by Mr. Levinstein. Visiting the naphthol distillery Mr. Levinstein dwelt upon the difficulties of dealing with this product, and he showed the ingenious methods that had been exercised in devising this plant. It is significant of how greatly chemical engineering affects the progress of chemical manufactures, for

despite the difficulties of preparation the consumers were demanding greater purity every year, although the product which is now produced in what is practically a state of chemical purity sells at fewer pence per pound than it fetched shillings some years ago.

The production of naphthionic acid was then inspected, but as part of the plant was of special construction, and had cost the company many thousand pounds in its elaboration, Mr. Levinstein asked the visitors to pardon him if he asked them to leave that portion of the plant uninspected, a request which it is needless to say was cordially complied with.

On the way to the colour making plant the central air-compressing station was passed, from whence, apart from the numerous small compressors employed on the different plants, a supply of compressed air is furnished to all parts of the works by a splendid compressor built by Messrs. Klein, Schanzlin and Becker. At the colour drying stoves also a new vacuum drier was shown which, besides having the advantage of occupying fifteen times less space than the ordinary stove, enables the colours to be dried at as low a temperature as 30 degrees centigrade.

The visitors were then shown the actual manufacture of naphthol scarlet, a colouring matter which has now almost entirely superseded cochineal.

The laboratories were next inspected, including the dye-house, where patterns sent in are analysed to determine the colouring matter with which they have been dyed, and the colours matched with coal tar products. The laboratories were all excellently fitted for the performance of technical work; and since so much is now being said about the number of chemists employed by colour manufacturers in Germany, it is encouraging to know that from 35 to 40 chemists are employed on these works, twelve of whom are research chemists, whose energies are confined to the laboratory, the managing of the various processes being in the hands of the remaining chemists, who have separate laboratories of their own.

Before leaving the works, specimens of cotton and woollen materials dyed with the Company's patented colours were inspected.

At the invitation of Mr. Levinstein the members then returned to luncheon at the Grand Hotel, where in a short address Mr. Levinstein once more pointed out that in throwing open the works, his object had been to show them—and particularly those from the South—that the coal tar industry not only existed, but was expanding in this country in spite of all that had been said to the contrary. He contended that while in the quantity and variety of products manufactured we were behind Germany, we were nevertheless gaining ground; and as regards the manufacture of primary products from which the colouring matters were prepared, we held a most creditable position. He thought manufacturers had been rather unfairly dealt with in regard to the question of employing trained chemists, and he thought that the number of trained foreign chemists employed in British works showed that manufacturers did appreciate the need of such men. He disputed the statement that we could at present turn out sufficient organic chemists, suitably trained, to meet the requirements of manufacturers. We wanted more organic laboratories similar to the Schorlemmer Laboratory at Owens College, so that we might be able to produce better organic chemists and more of them. Finally, he referred to the existing inequities of the Patent Laws, and advocated ardently the adoption of the various amendments that were so obviously needed; for unless this was done, all our improvements in education would never enable us to win back an industry which ought to be solely and truly a British one.

Dr. Edward Schunck (President of the Society), Mr. Thos. Tyrer, Sir Thomas Wardle, Mr. Perkins, Mr. Geo. E. Davis, Mr. Alderman Hoy, Mr. A. H. Allen, and Mr. Carter Bell also spoke.

PETROLEUM FIRE AT BAKU.—A fire broke out in the early hours of last Saturday morning at the great naphtha springs known as Tchernij Gorodok. The flames spread rapidly in all directions, until within a comparatively short time no less than five naphtha refineries and a wharf were destroyed. Several men were burned to death, and eight persons were injured by burns. About two million poods of kerosene have been consumed.

PETROLEUM FATALITIES CONTINUE.—A terrible petroleum lamp accident occurred at Grimsby last week, whereby a child named Isabel Boothby, aged eight years, of No 82, Victor-street, was burnt to death, and the mother shockingly injured. The lamp which was in the bedroom exploded, setting fire to the child's clothing and the bed. The mother tried to extinguish the flames, and was dreadfully burnt in the attempt. Two younger children were saved.—A maiden lady 61 years of age, named Hannah Jackson, was found dead in her house, 128, Crab Lane, Higher Blackley, Manchester, on Friday last week, having been badly burnt by the upsetting of a petroleum lamp. The deceased lady lived alone.—The low-flash oil is still doing its work in London. Out of six calls of fire in one night last week, the outbreaks in three cases were caused by lamp accidents.

Our Book Shelf.

MINERAL OILS AND THEIR BY-PRODUCTS. By I. I. Redwood. 336 pp., with Index. 67 Illustrations. Tables and Frontispiece. London: E. and F. N. Spon. 1897.

This work is practically the only book in existence that deals systematically with the Scotch oil industry, and is therefore of exceptional value as well as full of interest.

It is evident that the author speaks from a practical knowledge of the subject, while the historical survey of the origin and rise of the industry, presented in the first chapter, is as full and complete as the rest of the work is practical.

The author evidently has a rather poor opinion of directors, and thinks a works' manager should manage the works. At times there are flashes of humour in the text, but whether intentional or unintentional it is not quite clear. If the former, the author has a propensity for puns.

The second and third chapters deal with the geographical and geological occurrence of the shales from which the Scotch oils are obtained, and also the theoretical aspect of their production. Thenceforward the book is essentially practical, chapter four being devoted to a description of the retorts, refining, and pressing plant, and other apparatus used in the various processes, including also particulars of the latter. Ammonia water receives ample treatment in the fifth chapter, the production of sulphate being included under this heading.

The next two chapters deal somewhat more minutely with data concerning distilling methods, and the acid and soda system of refining.

The last chapter, on the laboratory, will be found a useful one, as it contains an account of all the testing processes in vogue both for the raw materials, finished products and by-products. Tests for pressing cloths and other similar minor matters are also given. The work is concluded by an abstracted collection of the patents taken out in connection with this industry, which covers from 1850 to 1889.

There are a few errors in the text, some editorial and others typographical, but fortunately they are not of a serious nature, while the illustrations and get up are excellent. It is a book that will be greatly valued by all oil manufacturers, and contains much of interest and service to oil chemists.

AN INTRODUCTION TO THE STUDY OF CHEMISTRY. By W. H. Perkin, Jun., and B. Lean. 339 p.p., 137 Illustrations. London: Macmillan and Co. Ltd. 1896. 2/6.

This text book marks the epoch of a new era in the teaching of chemistry. It is very rightly entitled an introduction to the study of chemistry. It is not the sole production of the authors, as, in the manuscript form, it has been used in various schools for teaching purposes, and the suggestions and revisions of the users have been incorporated in the book as it now appears. The birth of chemistry and the metric system having been dealt with, all kinds of measurements, either of length, mass, liquid volumes, temperatures, pressures, and densities are described in a manner that necessitates the full exercise of the learner's wits and reasoning powers. There is too much in the 34 chapters and appendix to deal with them one by one, but the lucidity and freshness of the text, and the descriptions of the experiments, may be emphasised in regard to the three chapters on matter and its change of state; crystallization; and properties of gases (four chapters). The preparations of the common acids, etc., are treated in a novel way that smooths the path of the student to an innovation in the form of a research on chalk, which at even this early stage the student is taught to conduct on the basis of Black's memoir that was republished in the Alembic Club Reprints. We heartily approve of this departure, and we do not think there are many impartial critics who will hold a contrary opinion when this chapter has been thoughtfully studied and due regard paid to its effect on the mind of the learner. The problems that conclude the chapters tend in like degree to stimulate the reasoning faculties. In fact they are *problems* and not a category of questions that can be answered from memory with a reasonable theoretical knowledge. Twelve short, practical examinations are given at the end of the book.

Such a work must prove a boon to both teacher and student, while to the latter it will be something more, the full appreciation of which will grow as his studies progress.

A JUNIOR COURSE OF PRACTICAL CHEMISTRY (new edition). By F. Jones. 192 p.p. including Index. 27 Figs. London: Macmillan and Co., Ltd. 1896. 2s. 6d.

After running through a number of editions this little work has now reached the eighth, and is presented with several additions. These are chiefly explanations of the separations, additional quantitative examples.

New tables for organic acids, the preparations of simple salts, and a table of quantitative methods have also been included. All the old features remain, while section vii. is wholly new. A somewhat novel and highly commendable feature is the quantitative analysis table, in which about 23 methods of precipitating the metals, the composition of the precipitates, the washing mediums, and an outline of the methods of procedure are given in a neat tabular form. This useful little laboratory hand book thus keeps pace with the educational progress of the day, and sustains its claim to a place in the front ranks of such books.

RESTRICTING NITRATE PRODUCTION.

A MEETING of the leading South American producers was held on June 25th last at Iquique, Chili, to take steps for a restriction of exports during the present season. These producers, of which there are about 80 of importance, formed a sort of combination two years ago for the purpose of regulating exports. By the arrangement then agreed upon, it was decided to limit exports from April 1st, 1896, to March 3rd, 1897, to 20,300,000 quintals, and for the year ending March 31st, 1898—in other words, the present season—to 23,500,000 quintals. Recently there have been efforts to secure a still further restriction of exports by 10 per cent. This plan was accepted some time ago by several of the oficinas which are owned by English capitalists. From the advices thus far received it appears likely that the plan will be carried through, a considerable number of the producers having agreed to it already, and enough to make a majority being expected to fall into line at an early date.

The principal reason for the proposed further reduction of supply is that during the past year the consumption of nitrate has fallen off considerably and prices have declined.

About eight-ninths of the total nitrate output of the west coast is taken by Europe, the remainder going to America.

The following table shows the output of the west coast, and also the total world's consumption for ten years past:—

OUTPUT AND CONSUMPTION OF NITRATE.

	West Coast Output. Tons.	World's Consumption. Tons.
1896	1,075,000	1,053,720
1895	1,220,000	1,042,920
1894	1,082,000	982,150
1893	933,000	890,470
1892	795,000	881,380
1891	783,000	927,260
1890	1,035,000	883,810
1889	930,000	734,860
1888	758,300	705,200
1887	693,000	552,110

EXPORTS OF ALKALI AND BLEACH.

THE following returns, which are taken from the official foreign and colonial statistics of the United Kingdom, give the amount and value of alkali and bleaching materials shipped to the undermentioned countries for the month of May, 1897, as compared with the same month of 1896:—

ALKALI.

Port.	1896.	1897.	1896.	1897.
	Cwts.	Cwts.	£	£
Russia	21,807	41,970	6,042	11,998
Sweden and Norway	7,394	10,444	1,747	2,184
Germany	7,579	20,635	2,652	3,902
Holland	8,422	10,950	1,898	1,928
France	5,718	5,875	2,140	2,023
Spain and Canaries	22,314	27,821	7,598	8,709
Italy	19,938	20,348	4,613	5,581
United States	168,901	230,597	41,185	56,925
Australasia	20,922	20,091	6,291	6,076
British North America ..	15,219	16,737	4,002	3,533
Other countries	76,350	96,227	23,017	25,405
Total	374,564	501,695	101,185	128,264

BLEACHING POWDER, ETC.

Port.	1896.	1897.	1896.	1897.
	Cwts.	Cwts.	£	£
United States	50,922	52,424	17,162	16,772
Other countries	40,801	38,822	13,989	12,691
Total	91,723	91,246	31 5	29,463

Legal Intelligence.

MANCHESTER ASSIZES.

NISI PRIUS COURT

(Before Mr. Justice Kennedy and a Special Jury.)

M'MECHAN v. REDDAWAY AND CO., LIMITED.

This was an action brought to recover damages for what was alleged to be a trade libel. Counsel were—for the plaintiff, Mr. M'Call, Q.C., and Mr. Sutton; and for the defendants, Mr. Shee, Q.C., and Mr. Bradbury.

The parties are manufacturers of machine belting in Manchester, and the case for the plaintiff was that an advertisement which the defendants had published conveyed a serious imputation upon the plaintiff's honesty and position, because in substance the defendants, the plaintiff alleged, had chosen to say that the plaintiff was an imitator of their goods, and had tried to pass them off as the goods of the defendant company. The alleged libel, which was published in foreign as well as English newspapers, in the form of an advertisement, suggested that the plaintiff had been trying to pass off his goods as the "poor relation" of the camel-hair belting manufactured by the defendants, and to sell it as being of the same kind.

The defendants set up a counter claim, in which they said that the plaintiff, who traded as the Lancashire Belting Company, had also libelled them. It appeared that the defendants had carried a case respecting their rights to the title of "camel-hair belting" to the House of Lords, where they obtained judgment in their favour. In that matter they stated a case in which they said:—"Up to the year 1877, or thereabouts, machine belting was generally made of leather, but sometimes also of woven material. A firm calling themselves 'The Lancashire Belting Company' had for several years prior to the year 1877 been manufacturing and selling belting composed of woven material identical with that subsequently used by the appellant for his camel-hair belting, and such belting was sold under the name of 'The Lancashire Belting.'" The plaintiff published that statement, and accompanied it with the following:—"Lancashire, the pioneer hair belting, was the original and only genuine. So-called camel-hair and all other makes are imitations, and have adopted its colour. Trade-mark 'Lancashire,' registered, is the standard brand for indents for all markets. Thirty years' reputation; is to-day the best." The defendants contended that this was a libel.

Mr. John Hughes, who had had 27 years' experience in the belting trade, said in the course of that experience he had come across the Lancashire Belting Company's goods. They were first of a black colour, and afterwards painted red. Red was a common colour in the market. In reply to Mr. M'Call, the witness said he was not prepared to dispute the statement that the goods of the Lancashire Belting Company had been painted red since 1869.

Mr. C. Hopkinson, consulting engineer, said he had made himself acquainted with the history of woven belting. Asked by Mr. Bradbury whether it was true that the plaintiff was the pioneer, or first introducer, of woven belting.

Witness said woven belting was first introduced at a period far anterior to his own experience, which went back to 1873. He had informed himself by reading the specifications of inventors, and the earliest period he read of was 1840 or 1841. The specifications extended up to the present time, and in the series he found that in woven belting fibre, either animal or vegetable, was constantly spoken of as a common substitute for leather in making belts. Wool, hair, flax, hemp, and numerous other fibres were used. Many of the inventions related to the protection of the belting and the finishing of it. For that purpose linseed oil, mixed with various pigments was used, amongst them being lead oxide, burnt amber, and other ordinary paints. Resin was also used. Witness gave particulars of tests he made of the plaintiff's and the defendants' belting respectively in 1891. The tests, which were made at Owens College, showed that the defendants' belting was stronger than that of the plaintiff.

Mr. Bradbury: From that result, and from the examination you made at the time, is there any truth—in your opinion as a skilled witness—in the suggestion that our belting is an imitation of theirs?

Witness: I do not know that I can answer that question. An imitation may be much better than the original.

Mr. Shee, for the defendants, said Messrs. Reddaway had only retorted in answer to the plaintiff's attacks. The question the jury had to consider was whether these retorts were more than fair retorts. If they were not more than fair retorts, the plaintiff was not entitled to recover in his action. He commenced the warfare, and a man who commenced a warfare could not complain if, in an honest fight, he got the worst of the fray.

Mr. M'Call said the jury had to decide whether what the plaintiff complained of was a libel, and if so whether it was true. The plaintiff did not dispute that Mr. Reddaway was entitled to claim a monopoly in the words "camel-hair belting." In the plaintiff's advertisement he

had certainly not endeavoured to pass off his goods as goods manufactured by Mr. Reddaway. The plaintiff was entitled to say his belting was original, and it was no reflection upon Mr. Reddaway to say that. There was no complaint with regard to the plaintiff's advertisement until the second advertisement was issued, and it was that which no doubt "galled the withers" of Mr. Reddaway. It was the statement taken from the "Times" report, that report being taken from the case made by Mr. Reddaway in the House of Lords. Had they ever heard—had any one ever heard—of an action for libel being founded upon a statement issued by the man who complained? Because the plaintiff had put a statement of the defendant into the form of an advertisement, the latter asked the jury to give him damages for libel, in other words, damages because his own words conveyed an injurious imputation upon himself. The words in the libel of which the plaintiff complained was that the Lancashire Belting Company were attempting to pass off their belting as a "poor relation" of camel hair belting. The words "poor relation" constituted an ill-conditioned sneer of Mr. Reddaway, which he did not rely upon. He did, however, rely upon the words "attempting to pass off." That could only mean that the "poor relation," whose manufacture they had heard over and over again, was so much less than the manufacture of his more wealthy contemporary, was attempting to pass off inferior goods as being the goods of Reddaway. That, Mr. Reddaway said, was what he intended to convey, and had the jury any doubt that he did convey it?

The Judge having summed up, the jury, after a brief deliberation, found for the plaintiff on the claim and counterclaim. They gave the plaintiff, on the claim £300 damages.

SEWAGE DEFENCE COMMITTEE.

A MEETING was held in Manchester last week to form a new society to be named "The Mersey and Irwell Watershed Purification and Protection Society." There was an influential attendance of traders representing the bleaching, calico-printing, brewing, dyeing, paper-making, chemical manufacturing, and other industries. Mr. Nathaniel Bradley presided, with the support of Dr. Pankhurst, Mr. Hudson, Mr. J. Taylor Kay, Mr. Norbury Williams, Mr. John Angell, and Mr. A. R. Scott. The members of the Society complain that they are subjected to impracticable and improper requisitions from the authorities. In particular they protest against being compelled to purchase land for the filtering of their effluent, such purchase being generally inconvenient and often impossible. They desire to attain by reasonable methods the purification of the water of the Manchester Ship Canal and the rivers and streams in the watershed. Artificial filtration, they maintain, has proved the most satisfactory method, and this is the process which they recommend. Mr. John Angell, the secretary, emphasised the point that the new Society was in no way designed to oppose and frustrate the hygienic necessities of the city. The Chairman added that they opposed the present administration of the law rather than the law so far as it was good. If traders were to be harassed by the authorities into doing things which were utterly impracticable their trade would in the end be driven out of the country. The Mersey and Irwell Joint Committee were always attempting something that was impracticable. The traders wanted a fair and reasonable administration of the law, and fixed and definite standards of purity, from the Mersey and Irwell Joint Committee. These at present they could not get. A number of resolutions were then passed constituting the Society. In the first resolution its objects were stated to be twofold. Firstly, the purification of the Manchester Ship Canal and the treatment of sewage generally, and also of the refuse from chemical and other manufactories by the best possible means; and, secondly, the protection of members from impracticable and improper requisitions, and the unreasonable and harassing standards and processes imposed by the authorities.—After some other resolutions had been passed the meeting was adjourned till the 7th of August. Mr. G. H. Wood, 4, Aytoun-street, Manchester, was appointed agent of the Society, and the following are the members of the Committee:—Mr. N. Bradley, chairman, Dr. Pankhurst, Messrs. John Angell, G. Allen, John Holt, and F. Murgatroyd.

Obituary.—The Right Hon. A. J. Mundella, M.P., died on Wednesday afternoon at his residence, Elvaston-place, South Kensington, London. Mr. Mundella was first taken ill on Tuesday week last, and Dr. Brinton, who was called in, pronounced the case to be one of paralysis. He was born in 1825. However we may have had occasion to differ with him, or condemn his attitude as Chairman of the Petroleum Committee, the fact in no way lessens our regret at his comparatively sudden death. In the course of his career he executed many useful changes. He was twice President of the Board of Trade, and established the Labour Department of the Board of Trade, the *Board of Trade Journal*, and the *Labour Gazette*. He was President of the British and Foreign School Society, of the National Education Association, and the Association of Technical Institutes.

THE POLLUTION OF THE DERWENT.

THE case of the Mayor and Corporation of Derby v. the Derbyshire County Council was tried on Thursday in the House of Lords, before Lords Herschell, Watson, Shand, and Davey. This was an appeal from a judgment of the Court of Appeal affirming a decision of the Queen's Bench Division. Mr. C. Hardy, Q.C., and Mr. W. Graham were for the appellants, and Mr. W. Stranger, Q.C., and Mr. Carver for the respondents. The respondents, the County Council, complained that the appellants caused or permitted pollutions of the river Derwent by allowing solid and liquid sewage matter to flow into it within the respondents' district, and they commenced proceedings against them in the County Court at Derby, under the Rivers Pollution Prevention Acts, 1876 and 1893, requiring the appellants to abstain from the commission of such offences, and to compel them to use the best practicable or available means to render the sewage harmless before allowing it to pass into the stream. In February, 1896, the respondents gave notice to the appellants that they intended to apply to the County Court judge for an order for discovery of documents and for leave to deliver interrogatories. The County Court judge, having heard the application, made the order asked for. The Queen's Bench Division and the Court of Appeal affirmed his decision, and from these judgments the present appeal was brought. The appellants contended that as the proceeding was of a penal character the respondents were not entitled to discovery.

Their Lordships, at the conclusion of the arguments for the appellants, held that the appellants' contention could not prevail, and dismissed the appeal with costs.

IMPORTANT PIPE LINE DECISION IN THE STATES.

THE United States Pipe Line Company, an independent company seeking to negative the oppression of the Oil Trust, has won another suit against a railroad company which resisted the laying of pipes under its tracks. The last appeal is by the Court of Errors and Appeals at Bradford, Pa., in the appeal of the Delaware, Lackawanna, and Western Railroad against the United States Pipe Line Company. This very important victory for the independent oil interests secures the pipe line crossing the railroad at Washington, N.J.

This is the place at which there was a pitched battle a year ago last November, when the railroad company attempted to tear up the line of the United States Pipe Line Company. The railroad sent a large force to take up the line which had been laid at a private crossing under its road, and the line was defended by the pipe line employees, and in the fight which took place several men were severely injured. The railroad company was forced to resort to law. In turn the pipe line company appealed to the courts of New Jersey, and Vice-chancellor Emery enjoined the railroad company from interfering with the pipes of the oil company. The case was taken to the Court of Appeals, and that body affirmed the decree of Vice-chancellor Emery. This decision will enable the United States Pipe Line Company to pump crude and refined oil from the Pennsylvania field to the seaboard.

Trade Notes.

ALGERIAN PHOSPHATES—A new bed of phosphates is being mined in Algeria to the west of the Tebessa beds by the Société Anonyme des Phosphates de Oued-Rédir. The product is darker than the Tebessa phosphates, being more like Peace River phosphate. The iron and alumina have been found by analysis to be low. The sole agents for this country are Messrs. Samuel Pitt and Co., of Glasgow.

A. M. PEEBLES AND SON, LTD.—The report for the year ended on June 30th last states that the gross profits, as shown by the Profit and Loss Account, amount to £25,281, and the net profits, after payment of the debenture interest to June 30th, and office expenses, directors' fees, &c., to £17,976. The dividend on the preference shares absorbs £4,272 of this sum, leaving £14,704 available for dividend on the ordinary shares, in respect of which an interim dividend amounting to £2,836 was paid in February. The directors recommend a dividend for the half-year at the rate of 8 per cent. per annum, less income-tax, making with the interim dividend 8 per cent. for the year. The payment of this dividend will absorb £6,836, leaving £6,868 to be carried forward to the credit of next year. The directors believe that the shareholders will endorse their policy in carrying forward so large a sum with a view to the formation of a substantial reserve fund and in order to put the company's undertaking on a thoroughly sound and financial basis.

BRITISH ALUMINIUM COMPANY, LTD.—An interim dividend at the rate of 7 per cent. per annum on the cumulative preference shares is announced.

GAS-LIGHT AND COKE COMPANY.—The accounts of this company for the six months ended June 30 show that the balance to the credit of the net revenue account is £366,552., which, together with £9,354. to be withdrawn from the reserve, will enable the directors to recommend a dividend at the statutory rate of 12½d. per cent. per annum.

THE INSTITUTE OF CHEMISTRY.—The Regulations for admission to the membership of the Institute of Chemistry for 1897-1898, have just been published. The examinations for membership will be held at 30, Bloomsbury Square, W.C., from July 20th to 23rd, and from July 27th to 30th inclusive. The pass list of these examinations will be received by the Council on or about the 14th of August, and will be published in the *Journal*.

ACETYLENE REGULATIONS IN SWITZERLAND.—The Swiss International Congress for regulating the production and use of acetylene has drawn up the following prescriptions, subject to final revision: Government permission is necessary for erecting and employing plant for making acetylene. The use of liquid acetylene and portable lamps for it is forbidden. Calcium carbide should be stored in separate places, dry and easy to ventilate, into which no light must be taken. Supplies of carbide must not exceed 50 kilos. (1 cwt.). The pressure in the producing chambers, pipes, and receivers must not exceed 6 centimeters (2.4 inches); and the apparatus must be fitted with pressure gauges, working automatically, for facilitating a check on the pressure. The use of pure copper is forbidden for lighting appliances. The conduct and supervision of the plant is only to be entrusted to persons who can be depended upon, and who are conversant with the properties of the gas and the use of the appliances. Each appliance is to bear a prominent notice that unauthorised persons are forbidden to touch it. Penalties are to be imposed for any contravention of the prescriptions.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols are easier both qualities, now standing, at 2s. 1d. There is practically no business doing, either in carbolic acids or naphthas, prices remaining as last quoted. Anthracene is dull at 6d. for 30% A, and 5d. for B. Pitch quiet at 18s. to 21s. f.o.b. East Coast.

Sulphate of ammonia keeps firm, with a moderate inquiry. There would be plenty of buyers in the forward position if makers would sell ahead at current values. This, however, they will not do, a premium, however small, being insisted on. Closing prompt values were:—Beckton, £7. 11s. 3d.; London, outside makes, £7. 10s.; Liverpool, £7. 12s. 6d.; Hull and Leith, £7. 10s.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade there is a continuance of fair demand for export both in alkali and bleaching powder. In all the main products, however, the general state of trade is quiet, and there are no movements of consequence to record in values. Alkali, 58%, steady at the convention price of £3. 17s. 6d., bags, f.o.r., but subject to usual variations for export. Caustic soda is more freely offered, but unchanged in price. Current quotations are:—F.o.b., Liverpool, 77%, £8 17s. 6d. 74%, £8.; 70%, £7 2s. 6d.; 60%, £6 2s. 6d. in 10 ton lots and upwards. Bleaching powder, £6. 7s. 6d. to £6. 10s. f.o.r., and £6. 12s. 6d. to £6. 15s., hardwoods, f.o.b. Liverpool, and £6. 10s. f.o.b. Tyne. Chlorate of potash and soda quiet at 4d. to 4½d. per lb. respectively. Soda crystals and bicarbonate are unchanged. Salt cake steady at 19s. f.o.r. Sulphur £4 12s. 6d. per ton. Potash, caustic and carbonate continue in good request, and prices are unaltered for near deliveries, but slightly easier for forward contracts. Yellow prussiate of potash steadier and with firmer tendency at 5½d. per lb.; cyanide also dearer, and makers are very fully sold. Carbolic acid, crystals and liquid, quiet, and prices are in buyers' favour. In sulphate of copper there is only little business doing at and about £16. f.o.b. Acetate of lime, brown, £4. 15s. c.i.f., general demand slack; grey, £7. 15s. c.i.f. White sugar of lead, £22. 10s. to £23s. c.i.f.; brown, £15. 10s. Acetate of soda neglected at £12. 10s. per ton. White powdered arsenic still quiet, but price firm at £22. nett Garston. Nitrate of soda continues to offer at low rates for prompt delivery.

REPORT ON MANURE MATERIAL.

The market continues to be very quiet, buyers everywhere being indifferent. Quotations for mineral phosphates are unchanged, but for good lines sellers are inviting offers at some concession. No fresh

business in River Plate bones is reported—nearest value of handy cargoes for autumn shipment is £3. 12s. 6d. per ton, delivered good United Kingdom ports. Bombay bone meal offers at £3. 11s. 3d. per ton, spot and for shipment, without attracting much attention. Nitrate of soda is quiet in all positions, the efforts of producers to combine for further curtailment of shipments over the next twelve months having been unsuccessful. Ordinary quality on spot may be had at 7s. 4½d. per cwt., and fine 7s. 6d. per cwt. 1,200 bags Patagonian guano, about 10% ammonia and 20% phosphate of lime, sold at £4. 15s. to £4. 17s. 6d. per ton, nett cash, in bags, gross weight, ex quay, Liverpool.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron. Scotch warrants closed at 43s. 10½d.; Middlesbro', 39s. 2d. cash; and hematite, 46s. 7½d. Copper easier: Chili bars, G.O.B.'s and G.M.B.'s, closed at £47. 15s. to £48. cash, and £48. 1s. 3d. to £48. 6s. 3d. three months. Tin quiet: Straits closed at £62. 5s. to £62. 15s. cash, and £62. 16s. 3d. to £63. 6s. 3d. three months; Australian, £63. 10s.; English ingots, £66. Lead firmer: Spanish, £12. 5s. to £12. 6s. 3d.; English, £12. 7s. 6d. to £12. 10s. Silesian spelter, ordinary, £17. to £17. 2s. 6d. Nickel, 1s. 2½d. Antimony, £29. 10s. to £30. Quicksilver: First hands, £7. 5s.; second hands, £7. 3s. 6d. Copper shares quiet: Cape, 2½ to 2⅞; Copiapo, 2⅞ to 2⅞; Libiola, 2½ to 2⅞; Mason and Barry, 2¼ to 3; Rio Tinto, 2⅞ to 2¼; Tharsis, 5½ to 5¾.

GLASGOW, WEDNESDAY.—Market idle, with a limited business. Scotch done at 43s. 11d. cash, and 44s. 1d. one month; buyers, 43s. 10½d. cash; sellers, 1d. more. Cleveland, buyers, 39s. 2d. cash; sellers, 39s. 3d. Cumberland hematite, buyers, 46s. 7½d. cash; sellers, 46s. 8½d. Middlesbrough hematite, buyers, 47s. 2½d. cash; sellers, 1d. more.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is very quiet—buyers and sellers are both indifferent, and there are no sales worth noticing. Olive is in more active demand, there being a good business passing at full values. The improvement in linseed has developed, and the market is firm, with holders at 15s. 9d. to 16s. 6d. per cwt. for Liverpool makes in export casks. Cottonseed is also in fairly good demand at an advance for Liverpool refined at 15s. 9d. to 16s. 3d. per cwt. Castor oil is very firm, holders being steady at 3⅞d. for good seconds Calcutta and 3¼d. per lb for first pressure French. Tallow, while keeping steady in price, is moving very slowly. Resin is selling fairly well at 4s. 7½d. to 4s. 9d. for common; medium 5s. to 6s., and fine 6s. 6d. to 7s. 6d. per cwt. Spirits of turpentine are moving rather better at the reduction to 20s. 6d. per cwt. Petroleum unchanged.

CAKES.—In linseeds West Americans have been doing well at an advance, and are now held on spot for £5. 2s. 6d. to £5. 7s. 6d. Liverpools are also firm at last quotations. American decorticated cottonseed firm, and moving well at £5. 2s. 6d. to £5. 15s., but Liverpool (decorticated and undecorticated) have been quiet. Egyptians are firmly held for £3. 10s. per ton, and are scarce at that.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire—common £10., medium £12., best £15.; Derbyshire—common 40s., medium 50s., best 60s.; Welsh—best 90s., seconds 50s., and common 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead: £16. Red lead unchanged. Venetian red: £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide: £22. 10s. to £25.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—It may be of interest in passing to observe the position of ports from figures recently published through the new Blue Book. The total value of imports and exports passing through London, Liverpool, and Hull, in round figures, are 230, 196, and 47 million pounds respectively, whilst Manchester's relative position is the eighth port with a value of 16 million pounds, which has not been secured at the expense of Liverpool. Hull's exports are less by six million pounds than they were 20 years ago, and, on the other hand, it is the only port showing an advance during the year upon transshipment goods, a situation largely created by the Merchandise Marks Act.

The oil market continues almost unchanged upon the prices recorded a week ago. The linseed oil market is steady, and quoted spot 13s. 9d.

naked; forward August 13s. 10½d.; last four months, 14s. 3d. per cwt.; boiled and refined, from £1. to £1. 10s. per ton extra. Refined cotton seed oil is dull and a trifle easier: Spot, naked, 13s. 6d. sellers; also the same for November-April. Crude is quoted 12s. 4½d. Filtered refined, £1. per ton extra. Casks £1. 1., and ordinary barrels £1. 10s. per ton extra. Castor oil extracted here continues to find an encouraging market, and quoted from 3¼d. per lb. Cod oils from £16. to £18. per ton. Olive oil is a better and firmer market, but no advance has been recorded. Italian olive oil soaps, £15. 6s. to £18. 2s. per cwt., ex quay. Oleines are quiet in spite of the reductions, £16. to £18 per ton. Foreign butters continue unchanged.

CAKES.—Many mills here continue closed, and others working part time. Linseed cakes very quiet, 95% pure, £6. 2s. 6d. Oilcakes, £5. 2s. 6d. to £5. 5s. Americans, £5. 7s. 6d. Russians, £6. 2s. 6d. per ton. Cotton cakes demand about nil; best makes, £3. 12s. 6d.; seconds, £3. 10s.; November-April, £3. 13s. 9d. Rape cakes unchanged.

PAINTS.—Makers continue busy. Mineral colours £4. to £8. per ton; ordinary colours in oil from £10. per ton; ready mixed from £23 in tins. Imperial black varnish, £5. in barrels; oak varnish from 5s. per gallon.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Business became interrupted Thursday and Friday of last week, owing to the commencement of the chief holiday of the season for Glasgow and its district, and up to the time of writing there has been no resumption. A few of the works will recommence production and delivery to-morrow or Thursday, but the mass will be idle till Monday. Some who are badly off in regard to demand will remain shut for the best part of three weeks altogether. Owing to the general stoppage the market is without the usual accurate indications, but there is good reason to infer that price changes are few and unimportant. Borax and sulphate of copper are easier a little. Sulphate of ammonia, spot business, is still in the immediate vicinity of £7. 10s. f.o.b. Leith. General chemicals, with regard to certain markets, will be more assured because of the agreement (on report) between the home syndicate and foreign makers.

Chief prices current are:—Soda crystals, £2. 12s. 6d., nett, Tyne, soda ash, 48/62°, £4. 2s. 6d. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £5. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8., 70/72° £7. 2s. 6d., 60/62° £6. 2s. 6d., and cream 60/62° £6., all nett, Liverpool; bleaching powder, 35/37°, £6. 10s. nett, Tyne; saltcake, 19s. to 20s.; borax, English, refined, £14. 15s. and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4d. less 5%, any port; nitrate of soda, 7s. 6d. to 7s. 9d.; sulphate of ammonia, £7. 10s., prompt, f.o.b. Leith; sal ammoniac, first and second white, £33. and £31. nett any port; sulphate of copper £16., less 5% Liverpool; paraffin scale, hard, 1¼d. to 1½d., and soft, 1½d. per lb.; paraffin wax, 120° semi-refined, 1¼d. to 2d. per lb.; paraffin spirit (naphtha), 6½d. per gallon; paraffin oil (burning), No. 1, 6¼d., and crystal, 6½d., at Glasgow and other big centres, for Scotch buyers (English sales ½d. to ¾d. lower); ditto (lubricating) 865° £5. to £5. 5s., 885° £5. 15s. to £6. 5s., and 890/895° £6. 10s. to £7. Week's imports of sugar at Greenock were 2,886 baskets cane unrefined, and 23,556 bags beet unrefined.

TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals continue in fair demand, and prices are as follows:—Caustic, 76/77°, £8. 15s. to £9. per ton; 70°, £7. 10s. per ton. Soda crystals, £2. 12s. 6d. per ton, gross weight, for local. Sulphur continues firm, with an upward tendency, at £4. 15s. to £5. per ton.

Bleaching powder, softs, £6. 10s. per ton, nett; hard, £6. 15s. per ton, nett; caustic soda, 76/77°, £9. per ton, nett; do., 70°, £7. 10s. per ton, nett; recovered sulphur, 2 cwt. bags, £4. 15s. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. 6d. per ton, nett; do., 52%, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening.

£3. per ton, nett weight; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett weight; blanc fixe, £7. 5s. per ton, nett weight; chloride of barium, refined crystals, £6. 15s. per ton, nett weight; do., 90/95 crude calcined, £6. per ton nett weight; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

COAL.—The market for steam coal continues steady, with a fair inquiry, the price for best qualities still being quoted at 8s. 7½d. to 8s. 9d. per ton. Smalls are also steady at 3s. 6d. to 3s. 9d. per ton. Gas coals are in good demand, and house coals for the time of year are fairly steady.

New Companies.

William Robinson (Manchester), Ltd. CAPITAL £2,000. in £10. shares. This company has been formed to acquire the business of J. and S. Robinson, Camp-street, Deansgate, and to trade as oil, fat, soap and glycerine makers and merchants.

New Reichenhall Co., Ltd.—CAPITAL £33,000. in shares of £1. each, of which 25,000 are preference. This company has been formed to acquire the selling rights of mock pine products in the United Kingdom, and to trade as drysalers, oil and colourmen, etc.

Thornton and Co., Ltd.—CAPITAL £100,000. in £5. shares. This company has been formed to acquire the firm's retail and wholesale india-rubber and gutta-percha manufacturing business. Registered office is 2, Hanover-street, Edinburgh.

Anglo-Caucasian Oil Co., Ltd.—CAPITAL £150,000. in £10. shares. This company has been formed to buy, sell, and manufacture all kinds of mineral, vegetable, and animal oils. Registered office, 18 and 19, Gt. St. Helens, E.C. The subscribers to the memorandum of association are:—F. Lane, 26, Gt. St. Helens, E.C., merchant; W. Macandrew, 26, Gt. St. Helens, E.C., merchant; E. Cambour, 7, Rue Scribe, Paris, counsel; G. Marotte, 133, Rue du Ranelagh, Paris, counsel; M. Baer, 13, Rue Lafayette, Paris, engineer; I. Braun, 13, Rue Lafayette, Paris, engineer; G. Robert, 10, Place Vendome, Paris, merchant.

Atmospheric Nitrogen Co., Ltd.—CAPITAL £100,000. in £1. shares. The company has been formed to acquire and work patents for the production of cyanides and other azotic compounds. The subscribers to the memorandum of association are:—W. H. Taylor, 65, Fore-street, E.C., engineer; J. Bennett, 15, Plympton-avenue, Brondesbury, cycle dealer; H. V. Taylor, 28, Finsbury Pavement, E.C., engineer; E. B. Russell, 28, Finsbury Pavement, E.C., secretary; J. James, 28, Finsbury Pavement, E.C., engineer; J. H. Thornley, 57, Moorgate-street E.C., clerk; A. D. Osborn, 57, Moorgate-street, E.C., clerk.

IMPORTS OF CHEMICAL PRODUCTS

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending July 10th.

Acetate of Lime—
U. States, 481 bgs. J. R. Francis & Co.
481 L. & I. D. Jt. Co.

Acetic Acid—
Holland, 100 pks. A. & M. Zimmermann
" 60 R. W. Greeff & Co.
16 Little & Johnston

Acetone—
France, 13 drs. A. H. Wintersgill
Holland, 1 ck. Carey & Sons

Alkali—
France, 30 c. J. Barber & Co.
65 P. Hecker & Co.

Alum—
Belgium, 13 cks. R. W. Greeff & Co.
Holland, 483 pks. Ohlenschlager Brs.

Ammonium Chloride—
Holland, 39 cks. H. Lorenz
19 J. Barber & Co.

Anhydrous Ammonia—
Holland, 39 cks. H. Lorenz

Arsenic—
Portugal, 69 brls. Coverley & Westray
Melbourne, 50 cks. Welch, Perrin & Co.

France, 20 kgs. Petri Brs.

Asbestos—
France, £18 Girard, Frs. & Co.
" 9 Sollas & Sons
" 7 L. & I. D. Jt. Co.
Italy, 40 T. Boorn
" 123 Imperial Asbestos Co.

Barium Chloride—
Germany, 22 cks. Petri Brs.

Barytes—
Belgium, 83 pks. O'Hara & Hoar
Holland, 1 J. Owen
" 114 cks. W. Harrison & Co.

Germany, 16 Steinhoff, Sons & Co.
Belgium, 71 W. Harrison & Co.

" 212 J. L. Lyon & Co.
" 37 Fleming's Oil & Chemical Co.

Holland, 67 bgs. W. H. Carey & Sons

Bleaching Powder—
Germany, 108 c. H. Lambert
Belgium, 75 cks. Elkan & Co.

Bromine—
Germany, 60 cs. A. & M. Zimmermann

Gamphor—
Japan, 134 tubs R. Warner & Co.
Hong Kong, 19 cs.
" 100 S. Figgis & Co.

Caoutchouc—

U. States, 20 c. W. Balchin
E. Indies, 19 Stewart, Hall & Co.

Germany, 20 Wallace Brs.
Zanzibar, 30 Brooks & Green
P. E. Africa, 71 Hale & Son
" 51 L. & I. D. Jt. Co.

Zanzibar, 129 S. Figgis & Co.
Madagascar, 21 Major & Field
Holland, 42 Prop. Bull Wf.

Zanzibar, 30 Brooks & Green
Madagascar, 87 Kleinwort Sons & Co.

Germany, 63 W. A. Collins

Carbolic Acid—
Holland, 50 pks. Blagden, Waugh & Co.

Castor Oil—
France, 14 brls. Anderson, Weber & Smith

Caustic Potash—
Belgium, 8 drs. Petri Brs.
France, 17
Germany, 76 Domeier & Co.

Chemicals (otherwise undescribed)
Germany, £534 H. Lambert
" 537 L. & I. D. Jt. Co.
Belgium, 5 T. Palmer
Holland, 460 T. H. Lee
Germany, 209 T. Boorn
" 769 A. & M. Zimmermann

" 80 J. Norrenberg & Co.
U. States, 560 L. & I. D. Jt. Co.

France, 15 Mory & Co.
Belgium, 26 O. Scholzig
France, 3 cks. H. Wallace & Co.

Belgium, 137 John Cockerill Line
Sweden, 17 M. D. Co.
U. States, 7 Seaward Brs.
Holland, 10 J. Barber & Co.

Cream of Tartar—
Italy, 20 cks. Howard & Sons
" 45 Thames S. T. & L. Co.

Holland, 30 Kirkpatrick & Co.
France, 13 B. & F. Wf. Co.
Spain, 5
U. States, 4 A. Lawrence
France, 5 C. Atkins & Nisbet
" 2 Blackmore, Lacont & Co.

Portugal, 12 G. Knowles & Co.

Dextrine—
Holland, 5 bgs. J. Knill & Co.

Dyestuffs—

Argols
Italy, 82 cks. Thames S. T. & L. Co.
" 1,776 bgs. B. Jacob & Sons

Cochineal
Canaries, 73 bgs. W. M. Smith & Sons
" 11 Knowles & Foster

Cutch
Germany, 10 cs. Brown & Emslie

Extracts
France, 12 cks. Union Ltge. Co.
" 62 bxs. T. H. Lee

Denmark, 5 cs. A. F. White & Co.
Austria, 50 brls. A. J. Humphery

Fustic
B.W.I., 7 t. S. Dobree & Sons

Gambler
Singapore, 370 bgs. S. Barrow & Bro.

Indigo
E. Indies, 4 chts. Croysdale & Co.
" 11 Park Macfadyen & Co.

Logwood
B.W.I., 46 t. T. Hankey & Co.

Myrabolams
E. Indies, 2,000 pkts. P. & O. Co.
" 616 bgs. Dalton & Young
" 616 Scriven Brs. & Co.

Orchella
Portugal, 7 bls. Prop. Bull Wf.

Saffron
Spain, 1 cs. J. Knill & Co.
" 2 Richardson, Spence & Co.

Shumac
Italy, 500 bgs. J. Kitchen
" 140 R. Waters

Tanners' Bark
Melbourne, 25 t. Boutcher, Mortimore & Co.

Natal, 59 A. & W. Nesbitt
" 25 Flack, Chandler & Co.

Turmeric
E. Indies, 70 bgs. Williams, Torrey & Co.
" 5 W. Balchin
" 243 Brown & Elmslie
Singapore, 316 Anderson, Weber & Co.

Farina—
Holland, 50 bgs. J. Barber & Co.
" 50 G. Hornzee
" 50 J. Knill & Co.

Glucose—
U. States, 75 pks. 460 c. Williams, Torrey & Co.
Germany, 20 22 Colthurst & Harding
U. States, 2,250 2,250 R. G. Hall & Co.

" 1,000 1,000 Ohlenschlager Brs.

" 900 900 Bellamy's Wf. Co.
" 250 250 Bennett S. S. Co.

" 750 750 G. Clark & Son
" 750 550 Fellows, Morton & Co.

" 500 500 Beresford & Co.
" 2,246 2,246 E. Thompson & Co.

" 250 250 Trier, Meyer & Co.
" 250 250 L. & I. D. Jt. Co.

" 4 23 Linton, Hubbard & Co.
" 250 250 Knowles & Pagett

" 200 200 C. S. Lovell

Glue—
France, £34 Mory & Co.
Austria, 26 M. D. Co.

Germany, 39 Phillipps & Graves
" 72 Steinhoff, Sons & Co.

Belgium, 308 J. Barber & Co.
Germany, 19 Craven & Co.

France, 370 Morison, Pollexfen & Co.
U. States, 205 L. & I. D. Jt. Co.

Germany, 68 M. D. Co.
" 19 T. H. Lee
U. States, 10 Lunham & Moore

France, 90 T. M. Duche & Sons
Holland, 39 Carey & Sons
Sydney, 236 Williams, Torrey & Co.

Portugal, 20 T. Home & Co.

Iron Oxide—
Holland, 60 t. W. Harrison & Co.

Lamp Black—
France, 10 cks. J. Harrison

Litharge—
Holland, 6 cks. J. Barber & Co.

Manganese Ore—
France, 1 t. H. Johnson & Sons

Manure—
E. Indies, 25 t. A. Hunter & Co.
Chili, 2,100 L. & I. D. Jt. Co.

Belgium, 46 F. Claydon & Co.
Persian Gulf, 10 Baxter & Hoare
E. Indies, 250 Union L. Co., Ltd.
Germany, 28 A. J. Luke & Co.
E. Indies, 200 F. A. Hodgkinson & Co.

Methyl Alcohol—
Germany, 5 cks. T. Jones & Co.
" 9 dms. L. & I. D. Jt. Co.

Mica—
E. Indies, £1745 W. M. Smith & Sons

Molasses—

B.W.I.,	40 cks. 400 c.	R. G. Hall & Co.
"	30 330	W. Anderson & Co.
"	20 240	Perkins & Homer
"	14 140	Wilkinson & Gaviller
U. States,	30 165	J. T. Morton
B.W.I.,	49 600	Cooperage Wf. Co.
U. States,	50 280	R. G. Hall & Co.
"	370 2,035	Deering & Robottom

Ochre—

France,	8 cks.	C. F. Gerhardt
Holland,	2 4 pks.	Phillipps & Graves
France,	20 brls.	A. J. Gray

Phosphate Rock—

Belgium,	310 t.	Anglo-Contl. Guano Works
U. States,	1,553	A. Hunter & Co.
Colombia,		

Pitch—

Belgium,	16 brls.	Poth, Hille, & Co.
Holland,	16	Callenders Cable & C. Co.

Plumbago—

Ceylon,	447 cks.	J. Thredder, Son, & Co.
Germany,	50 cs.	E. & T. Pink

Potash—

Holland,	10 cks.	Phillipps & Graves
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Potassium Bicarbonate—

Holland,	5 kgs.	A. & M. Zimmaer-mann
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Potassium Carbonate—

Belgium,	300 c.	Petri Brs.
Germany,	37	"
France,	120	W. E. Cole

Potassium Chlorate—

Holland,	15 cks.	J. W. Drysdale
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Potassium Oxymuriate—

Sweden,	150 pks.	G. Boor & Co.
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Potassium Permanganate—

Germany,	35 kgs.	R. W. Greeff & Co.
"	20 20 pks.	H. Lorenz

Potassium Sulphate—

Holland,	26 cks.	J. Owen
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Rosin—

U. States,	1,000 brls.	J. Knight & Sons
"	1,200	E. Cook & Co.
"	9	H. Rosenwag
"	1,950	T. Nickels & Co.

Saltpetre—

Germany,	12 cks. 140 kgs.	P. Hecker & Co.
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Soda—

Holland,	2,800 c.	R. Waters
Belgium,	1,800	J. W. Barker
"	240	Sawer, Sons, & Co.
Germany,	2,000	R. Waters
Belgium,	1,080	"

Sodium Acetate—

Belgium,	160 cs.	J. Harrison
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Starch—

Holland,	166 cs.	Phillipps & Graves
U. States,	865 bgs.	R. G. Hall & Co.
"	650	R. Bennett & Co.
Holland,	688 cs.	Little & Johnston
Belgium,	455	F. Claydon & Co.
"	80	Hore & Scrivener
"	70	Sawer, Sons, & Co.
"	60	Leach & Co.
"	130	Taylor Brs.
"	1,385	E. & T. Pink
"	200	Becker & Wagner
France,	10	H. Taylor
Germany,	150	Seaward Brs.
"	40	Phillipps & Graves
"	210 bgs.	R. Bennett & Co.
U. States,	1,000	L. & I. D. Jt. Co.
"	800	Knowles & Padgett
Holland,	32 cs.	T. H. Lee
France,	400	W. E. Cole
U. States,	200 brls.	Beck & Pollitzer
France,	40 cs.	J. Barber & Co.

Stearine—

Belgium,	25 bgs.	H. Hill & Sons
"	150 8 cks.	"

Sulphur—

Italy,	95 t.	G. Boor & Co.
"	20	J. Greig
"	8	J. T. Morton
"	10	F. Smith

Tar—

N. Russia,	89 brls.	W. Beard & Son
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Tartaric Acid—

Holland,	3 pks.	Kirkpatrick & Co.
"	3	H. Lorenz
U. States,	15	A. Hughes
Holland,	12	Domeier & Co.
"	11	F. C. Devon & Co.
"	10	B. & F. Wf. Co.
France,	12	"

Ultramarine—

Holland,	8 cs.	J. Barber & Co.
"	1 pk	G. Rahn & Co.
Germany,	17	Steinhoff, Sons, & Co.
Holland,	3	20 cks. Hernu, Peron, & Co.
"	4	Phillipps & Graves

Varnish—

Belgium,	2 pks.	Stobbs, Wilson, & Co.
U. States,	4	Lunham & Moore
"	5	Williams
France,	4	Torrey, & Co.
U. States,	121	Mory & Co.
"		Taylor Brs.

Vermilion—

Holland,	5 pks.	J. Barber & Co.
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White Lead—

Belgium,	4 brls.	G. E. Banes
Holland,	95 cks.	T. & W. Farmiloe, Ltd.
Germany,	65	Randall Brs.
"	18	Taylor Brs.
Belgium,	20	Burrell & Co.
Germany,	25	W. A. Rose & Co.
Holland,	10	"

Wood Pulp—

Germany,	60 brls.	C. S. Lovell
"	1 ck.	M. Bensher
Sweden,	406 pks.	Phillipps & Graves
"	1,960 brls.	Christophersen, Andrews, & Co.

Germany,	1,100	J. Sharp
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Sweden,	506 pks.	W. G. Taylor & Co.
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Norway,	300	W. E. Bott & Co.
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"	920	E. J. & W. Goldsmith
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Holland,	27	Thames S. T. & L. Co.
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Belgium,	1,936	1,703 brls. E. J. & W. Goldsmith
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Sweden,	340	J. Owen
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Portugal,	500	W. G. Taylor & Co.
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"	250	Page, Son, & East
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"	550	Caima Wood Pulp Co.
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Norway,	160	W. Friedlaender
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"	1,540	London Paper Mills Co.
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Germany,	1,000	Tough & Henderson
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Zinc Oxide—

Germany,	45 cks.	R. W. Greeff & Co.
"	110 brls.	W. Balchun, Ltd.
U. States,	200	M. Ashby, Ltd.
Holland,	300 cks.	Soundy & Sons
"	10	157 pks. Prprs' Dowgate Dk' C. Co.
"	4 cks.	Brit. Anti-Fouling

LIVERPOOL.*Week ending July 8th.***Aluminium—**

New York,	500 bxs.	Aluminium Supply Co.
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Asbestos—

Rotterdam,	9 brls. 25 crts.	
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Barytes—

Antwerp,	52 cks. 250 bgs.	
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Benzine—

New York,	1,000 brls.	
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Borax—

Rouen,	6 cks.	
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Chemicals (otherwise undescribed)

Hamburg,	10 cks. 5 cs.	
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Citric Acid—

Bordeaux,	1 ck.	
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Cod Oil—

Hamburg,	14 cs.	
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Cream of Tartar—

Oporto,	5 cks.	
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Dextrine—

Stettin,	75 bgs.	J. Bunker & Co.
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Dried Blood—

Alexandria,	61 bgs.	
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Dyestuffs—

Annatto		
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Bordeaux,	4 cks.	
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Rotterdam,	2 crbys.	
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Argols		
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Bordeaux,	6 cks.	
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Oporto,	57	
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Cutch		
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London,	700 bxs.	
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Extracts		
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Halifax,	106 cks.	
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New York,	30	
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Gambier

Singapore,	5,606 brls. 181 bgs.	
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Myrabolams

Bombay,	1,750 bgs.	E. D. Sassoon & Co.
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"

"	2,289	"
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Shumac

Palermo,	5 brls. 250 bgs.	
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Turmeric

Antwerp,	88 bgs.	Aldridge, Salmon & Co.
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"

"	141	
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Farina—

Havre,	80 sks.	Cunard S. S. Co., Ltd.
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Gelatine—

Antwerp,	6 cs.	J. T. Fletcher & Co.
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Glucose—

New York,	100 brls.	T. M. Duche & Sons
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"

Boston,	48	
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Glue—

Newport News,	349	
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"

Stettin,	70 bskts.	Johansen & Dahl
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"

Rouen,	33 cks.	Co-op. W'sale Society, Ltd.
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St. Nazaire,

"	8 20 cs.	
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Guano—

B. Ayres,	1,600 bgs.	
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Limestone—

Antwerp,	1 crt.	J. T. Fletcher & Co.
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Manganese Ore—

Yokohama,	274 cks.	
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Mineral White—

Genoa,	100 bgs.	
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Naphtha—

New York,	5,783 brls.	
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Phosphate Rock—

Newport News,	165 sks.	
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Port Tampa (Florida),	2,749 t.	
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Potash—

Stettin,	2 cks.	Sachse & Klemm
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"

Dunkirk,	17 4 duns.	
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"

Rotterdam,	10	
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"

Rouen,	58	Co-op. W'sale Society, Ltd.
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Pyrites—

Huelva,	1,711 t.	Matheson & Co.
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Rosin—

Savannah,	1,500 brls.	
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Boston,	951	
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Salt—

New York,	250 bgs.	Morris Beef Co., Ltd.
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Soap—

New York,	94 brls.	
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Marseilles,	5 bds.	W. I. & Pac. S. S. Co.
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Newport News,	210	
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N. Orleans,	2,359	
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New York,	1 cs.	Colgate & Co.
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Soapstone—

Bordeaux,	13 cs.	Geo. G. Blackwell, Sons & Co.
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Soda—

Junin,	4,488 bgs.	New Jamarang N. Co.
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Sodium Acetate—

Rouen,	28 cks.	Co-op. W'sale Society, Ltd.
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Sodium Nitrate—

Iquique,	11,750 bgs.	San George Nitrate Co.
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Starch—

Hamburg,	316 cs.	
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Marseilles,	30	A. Manbre
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"	5 bds.	W. I. & Pac. S
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Sodium Prussiate —		
Antwerp,	16 brls.	
Starch —		
Rotterdam,	10 cs.	
Antwerp,	45 ¹	
New York,	1,200 bgs.	
Hamburg,	112	
Stearine —		
Rotterdam,	20 brls.	
Antwerp,	12 bgs.	
New York,	75 tcs.	
Tartar —		
Rotterdam,	8 cks.	
Tartaric Acid —		
Rotterdam,	5 cks.	5 kgs.
Tin Perchloride —		
Antwerp,	10 cks.	
Ultramarine —		
Rotterdam,	1 cs.	
Waste Salt —		
Hamburg,	620 cks. and qty.	520 bgs.
White Lead —		
Rotterdam,	18 cks.	
Wood Pulp —		
Gothenburg,	1,627 bls.	
Fiume,		102 pks.
Hamburg,	415	
Montreal,	253	1,500 bdl.
		1,769 rolls
Zinc Ashes —		
Antwerp,	9 cks.	
Zinc Chloride —		
Rotterdam,	5 dms.	
Zinc Oxide —		
Antwerp,	8 cks.	4 trls.
Zinc White —		
Rotterdam,	20 cks.	

HULL.

Week ending July 10th.

Acids —		
Leghorn,	10 cs.	Wilson, Sons, & Co., Ltd.
Albumen —		
Riga,	15 cs.	Wilson, Sons, & Co., Ltd.
"	10	
Arsenic —		
Hamburg,	100 cks.	Wilson, Sons, & Co., Ltd.
Asbestos —		
Genoa,	10 pks.	Wilson, Sons, & Co., Ltd.
"	2 cs.	
Barytes —		
Riga,	50 cks.	Wilson, Sons, & Co., Ltd.
Bremen,	44	
Antwerp,	56	H. F. Pudsey
Amsterdam,	23	W. & C. L. Ringrose
Antwerp,	200 bgs.	Wilson, Sons, & Co., Ltd.
Castor Oil —		
Genoa,	30 cs.	Wilson, Sons, & Co., Ltd.
Chemicals (otherwise undescribed)		
Amsterdam,	2 cks.	Hutchinson & Son
Hamburg,	3 cks.	Wilson, Sons, & Co., Ltd.
Cod Oil —		
Aalesund,	65 cks.	Wilson, Sons, & Co., Ltd.
Bergen,	100 brls.	"
Colours —		
Rotterdam,	10 brls.	W. & C. L. Ringrose
Antwerp,	5 cks.	Bailey & Leatham, Ltd.
"	10 brls.	Wilson, Sons, & Co., Ltd.
Rotterdam,	17 pks.	Sons, & Co., Ltd.
Ghent,	2 cks.	Hutchinson & Son
"	1 cs.	
"	20 brls.	Hutchinson & Son
"	1 cs.	
Cottonseed Oil —		
New York,	100 brls.	Wilson, Sons, & Co., Ltd.
Cream of Tartar —		
Rotterdam,	4 cks.	Hutchinson & Son
Extracts —		
Boston, U.S.A.,	10 cks.	

Farina —		
Harlingen,	83 bgs.	W. & C. L. Ringrose
Stettin,	250	Wilson, Sons, & Co., Ltd.
"	200	
Glucose —		
New York,	180 brls.	250 bgs.
Glue —		
Antwerp,	2 cks.	Bailey & Leatham, Ltd.
Christiansund,	1 brl.	Wilson, Sons, & Co., Ltd.
Kaolin —		
Rotterdam,	24 bgs.	Hutchinson & Son
Amsterdam,	20 cks.	Reckitt & Sons
Linseed Oil —		
Amsterdam,	176 brls.	Hutchinson & Son
"	116	G. & J. Rawstorn, Ltd.
Ochre —		
Marseilles,	42 cks.	
Phosphate —		
Ghent,	80 t.	
Antwerp,	8 cks.	Wilson, Sons, & Co., Ltd.
Pitch —		
Hamburg,	28 brls.	Wilson, Sons, & Co., Ltd.
Potash —		
Dunkirk,	25 cks.	Wilson, Sons, & Co., Ltd.
Antwerp,	20 dms.	Sons, & Co., Ltd.
Pumice Stone —		
Leghorn,	238 pks.	Wilson, Sons, & Co., Ltd.
Pyrites —		
Huelva,	892 t.	
Rosin —		
Savannah,	525 brls.	G. & J. Rawstorn, Ltd.
"	900	Wilson, Sons, & Co., Ltd.
Marseilles,	11 cs.	
Saltpetre —		
Antwerp,	135 bgs.	Wilson, Sons, & Co., Ltd.
Soap —		
Bremen,	1 ck.	Veltmann & Co.
New York,	7 cs.	
Rotterdam,	2	W. & C. L. Ringrose
Soda —		
Antwerp,	100 bgs.	Wilson, Sons, & Co., Ltd.
New York,	2 cks.	
Starch —		
Bremen,	3,140 cs.	Veltmann & Co.
Antwerp,	80	W. W. Osgerby
Ghent,	244	Wilson, Sons, & Co., Ltd.
Amsterdam,	80	W. & C. L. Ringrose
Ghent,	102	Hutchinson & Son
Antwerp,	116	Wilson, Sons, & Co., Ltd.
Stearine —		
Antwerp,	14 bgs.	Wilson, Sons, & Co., Ltd.
Tallow —		
New York,	100 tcs.	Wilson, Sons, & Co., Ltd.
Dunkirk,	48 cks.	"
Tartar —		
Naples,	1 ck.	Wilson, Sons, & Co., Ltd.
Tartaric Acid —		
Rotterdam,	6 cks.	Hutchinson & Son
"	2	W. & C. L. Ringrose
Treacle —		
New York,	939 brls.	Wilson, Sons, & Co., Ltd.
Boston, U.S.A.,	52	
Turpentine —		
Savannah,	1,948 brls.	
"	2,405	G. & J. Rawstorn, Ltd.
Ultramarine —		
Bremen,	20 cks.	
White Lead —		
Antwerp,	53 cks.	Bailey & Leatham, Ltd.
Amsterdam,	11	Hutchinson & Son
Rotterdam,	67	
Dunkirk,	26	Wilson, Sons, & Co., Ltd.
Amsterdam,	50	W. & C. L. Ringrose

Wood Pulp —		
Drontheim,	200 bls.	Wilson, Sons, & Co., Ltd.
Gothenburg,	1,669	
Oporto,	300	
Helsingfors,	16	
Hamburg,	320	Hutchinson & Son
Zinc Oxide —		
Hamburg,	12 cks.	Wilson, Sons, & Co., Ltd.

GLASGOW.

Week ending July 15th.

Arachide Oil —		
Rotterdam,	2 cks.	J. Rankine & Son
Barium Sulphate —		
Hamburg,	10 cks.	
Antwerp,	500 bgs	
Barytes —		
Rotterdam,	167 cks.	J. Rankine & Son
Hamburg,	300 bgs.	
Castor Oil —		
Antwerp,	59 cks.	
Chemicals (otherwise undescribed)		
Hamburg,	17 cks.	5 cs.
Colours —		
Hamburg,	23 cks.	3 cs.
Rotterdam,	2	J. Rankine & Son
Cream of Tartar —		
Barcelona,	37 cks.	
Tarragona,	5	
Dyestuffs —		
Alizarine		
Rotterdam,	3 brls.	J. Rankine & Son
Aniline —		
Rotterdam,	7 bxs.	J. Rankine & Son
Extracts		
Philadelphia,	25 brls.	
New York,	12	
Gambier		
Singapore,	453 bls.	Waddell & Bryson
Madder —		
Rotterdam,	11 cks.	J. Rankine & Son
Glucose —		
Philadelphia,	150 brls.	
New York,	299	
Glue —		
Rouen,	67 cks.	
Hamburg,	40 bgs.	
Gypsum —		
Rouen,	400 bgs.	
Lead Acetate —		
Hamburg,	12 cks.	
Litharge —		
Rotterdam,	16 cks.	J. Rankine & Son
Manganese Borate —		
Hamburg,	1 ck.	
Paraffin Scale —		
New York,	200 brls.	Anglo-Am. Oil Co.
Potash —		
Hamburg,	40 dms.	
Rotterdam,	30 cks.	J. Rankine & Son
Pyrites —		
Huelva,	3,843 t.	Tharsis Co.
Saltpetre —		
Hamburg,	48 bgs.	
Sodium Chlorate —		
Antwerp,	20 cks.	
Starch —		
Ghent,	20 cs.	
New York,	1,000 bgs.	
Antwerp,	102	
Tartar —		
Bordeaux,	25 cks.	
Oporto,	3	
Tartaric Acid —		
Hamburg,	5 cks.	
Treacle —		
Philadelphia,	500 brls.	
Ultramarine —		
Ghent,	2 cs.	
Varnish —		
New York,	12 pks.	
Waste Salt —		
Hamburg,	142 t.	50 bgs.
White Lead —		
Rotterdam,	62 cks.	J. Rankine & Son

Whiting —		
Rouen,	25 cks.	
Wood Pulp —		
Oporto,	250 bls.	
Hamburg,	200	
Christiania,	2,980	13 cs.
Zinc Oxide —		
New York,	100 brls.	
Zinc White —		
Rotterdam,	35 cks.	J. Rankine & Son

TYNE.

Week ending July 10th.

Alum Earth —		
Hamburg,	29 cks.	Tyne S. S. Co.
Asbestos —		
New York,	1 pk.	Furness Withy, & Co
Barium Chlorate —		
Rotterdam,	349 bgs.	Tyne S. S. Co.
Barytes —		
Rotterdam,	57 cks.	Tyne S. S. Co.
Amsterdam,	45	Wm. Swanston & Sons
Chemicals (otherwise undescribed)		
Hamburg,	3 cks.	Tyne S. S. Co.
Cod Oil —		
Drontheim,	2 brls.	
Colours —		
Rotterdam,	3 cs.	Tyne S. S. Co.
Glucose —		
New York,	50 brls.	Furness Withy, & Co.
Glue —		
Antwerp,	1 ck.	Tyne S. S. Co.
Kieselguhr —		
Bergen,	283 bgs.	
Limestone —		
Antwerp,	6 crts.	Tyne S. S. Co.
Phosphate —		
Coosaw,	2,700 t.	Langdale's U.S.A.
Antwerp,	80 bgs.	Chemical M. Co.
Phosphate of Lime —		
Dunkerque,	250 t.	Langdale's Chemical M. Co.
Potassium Carbonate —		
Antwerp,	1 ck.	Tyne S. S. Co.
Salt —		
Harburg,	350 t.	
Soap —		
Rotterdam,	30 cs.	Tyne S. S. Co.
Starch —		
Rotterdam,	156 cs.	Tyne S. S. Co.
Tartaric Acid —		
Rotterdam,	10 cks.	Tyne S. S. Co.
Varnish —		
Antwerp,	5 kgs.	Tyne S. S. Co.
Wood Pulp —		
Christiania,	1,200 bls.	

GOOLE.

Week ending July 7th.

Alizarine —		
Rotterdam,	21 cks.	
Barytes —		
Rotterdam,	24 cks.	
Caoutchouc —		
Boulogne,	11 cks.	
Colours —		
Hamburg,	52 cks.	10 cs.
Dyestuffs (otherwise undescribed)		
Rotterdam,	376 cks.	61 cs.
Boulogne,	56	75 pks.
Farina —		
Hamburg,	340 bgs.	
Delfsdyhl,	575	
Potash —		
Dunkirk,	12 dms.	2 cs.
Pyrites —		
Huelva,	1,463 t.	
Soap —		
Rotterdam,	3 cs.	
Starch —		
Rotterdam,	12 cs.	
Varnish —		
Boulogne,	10 cks.	
Waste Salt —		
Hamburg,	546 cks.	512 bgs.
Wood Pulp —		
Hamburg,	966 bls.	

GRIMSBY. Week ending July 10th.		Caoutchouc— Antwerp, 7 cs.	Colours— Hamburg, 52 cks. 7 cs. Antwerp, 16 46 pks.	Soap— Hamburg, 1 cs.
Aniline— Hamburg, 45 pks.		Chemicals (otherwise undescribed) Rotterdam, 49 cks. Hamburg, 10 cs.	Lamp Black— Helsingborg, 50 cks.	Starch— Antwerp, 80 cs.
				Wood Pulp— Kragero, 723 t.

EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON. Week ending July 14th.		Coal Products— Allzarine St. Petersburg, 16 cs. £846 Pt. Chalmers, 8 cks. 140 Lytelton, 3 brls. 70 Aniline Melbourne, 1 cs. £27 Sydney, 3 19 Anthracene Amsterdam, 366 cks. £1,085 Dusseldorf, 31 235 Benzol Hamburg, 55 puns. £445 Rotterdam, 150 cks. 601 Boulogne, 48 172 Colours Boston, 5 pks. £66 Cresote New York, 1,000 cks. £638 Boulogne, 50 pks. 120 Newport N., 1,000 607 Cresote Salts Philadelphia, 696 bgs. £170 Naphtha Ghent, 18 dms. £125 Melbourne, 50 26 Trepot, 50 brls. 148 Auckland, 20 15 Naphtalene Rotterdam, 100 bgs. £35 Paris, 403 258 Hamburg, 684 6 cks. 195 Pitch Boston, 11 cks. £30 Baltimore, 1,000 bgs. 150 Philadelphia, 250 82 Newport News, 553 156 Pyridine Bases Rotterdam, 10 brls. £103 Hamburg, 5 3 dms. 203 Tar Stockholm, 100 cks. £60 Cologne, 125 brls. 60 Singapore, 20 kgs. 9 Rotterdam, 200 125 E. London, 50 dms. 6 Hamburg, 150 68 Malmo, 2 8 Tar Oil Durban, 22 cks. £18 Rotterdam, 10 75 Coal Products (otherwise undes.)— Berbice, 10 brls. £10 Trepot, 2 dms. 15	Nitrous Oxide Gas— Sydney, 9 c. £25 Phosphorus— Melbourne, 1 c. £10 Potash— Stettin, 1 ck. £13 Gothenburg, 22 275 Potassium Chlorate— Cape Town, 20 kgs. £34 Ottawa, 10 c. 18 Potassium Cyanide— Auckland, 100 cs. £421 Rotterdam, 100 dms. 275 Potassium Prussiate— Stockholm, 1 ck. £21 Stettin, 5 c. 15 Philadelphia, 10 164 New York, 20 318 Saltpetre— Oporto, 7 t. 8 c. £140 Bahia, 2 15 56 Sheep Dip— Cape Town, 315 pks. £353 Durban, 100 dms. 20 Melbourne, 4 t. 1 c. 105 Soda— Cape Town, 3 t. 5 c. £10 Rotterdam, 5 30 Soda Crystals— Cape Town, 2 t. 4 c. £6 Fremantle, 13 1 39 Sodium Bicarbonate— Auckland, 1 t. £8 Fremantle, 1 10 c. 9 Launceston, 1 7 Sodium Prussiate— Rouen, 10 c. £18 Sodium Tartrate— Montreal, 1 t. 2 c. £81 Sulphur— E. London, 6 t. 16 c. £73 Sulphuric Acid— Colombo, 12 dms. £15 Durban, 2 cks. 6 E. London, 25 cs. 10 Trincmalee, 30 30 Beira, 12 12 Superphosphates— Riga, 100 t. £200 St. Petersburg, 10 30 Tartaric Acid— Antofagasta, 8 cs. £22 Sydney, 11 c. 65 Launceston, 1 7 Dunedin, 6 pks. 37	Rodosta, 10 17 Kustendje, 10 15 Las Palmas, 20 18 170 Alexandria, 2 62 Ancoia, 10 17 Ammonium Sulphate— Valencia, 31 t. £230 Las Palmas, 8 15 c. 75 Barcelona, 10 3 80 Tegal, 51 18 3 q. 407 Bleaching Powder— Alexandria, 4 cks. Baltimore, 42 Barcelona, 1 Boston, 177 Genoa, 45 Newport News, 252 New York, 45 Philadelphia, 207 Rouen, 93 Boracic Acid— Yokohama, 2 t. 19 c. £73 Copenhagen, 19 c. 1 q. 21 Borate of Lime— Newfairwater, 49 t. 19 c. 3 q. £390 Borax— Hobson's Bay, 2 t. 5 c. £35 Melbourne, 2 44 Hamburg, 31 11 505 Valencia, 2 3 34 Antwerp, 24 5 413 Galatz, 4 6 Toronto, 2 4 32 Rotterdam, 9 15 2 q. 185 Boston, 5 4 75 Montreal, 5 9 82 Amsterdam, 2 4 55 Copenhagen, 9 9 3 140 B. Ayres, 2 5 34 M. Video, 1 2 2 17 Danzig, 10 6 Stettin, 2 8 37 Carbolic Acid— Barcelona, 1 t. £26 Rangoon, 2 c. 9 Melbourne, 70 dms. 61 Genoa, 14 2 q. 58 Gibraltar, 12 4 Larnaca, 30 dms. 11 31 Cadiz, 5 2 13 Alexandria, 10 brls. 25 Caustic Soda— Alexandria, 65 dms. Antwerp, 36 Boston, 78 cks. Cadiz, 5 Copenhagen, 35 Gothenburg, 182 Hamburg, 40 10 Havana, 3 Ibrail, 35 La Guayra, 8 Leghorn, 10 10 brls. Manila, 194 Montreal, 7 5 New York, 472 Paris, 45 Perth, 15 Piraeus, 85 Reval, 50 Rotterdam, 168 Rouen, 137 San Francisco, 200 Saville, 192 Trieste, 18 Valencia, 25 Venice, 32 Chemicals (otherwise unites.)— Hamburg, 1 t. 10 c. £42 Barcelona, 2 50 Odessa, 2 54 Boston, 1 13 59 Philadelphia, 13 15 415
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LIVERPOOL.

Week ending July 14th.

Acetic Acid— Carthage, N.G., 1 c. £5	
Albumen— New York, 6 t. 1 c. £370	
Alum— Melbourne, 2 t. £12 Sydney, 80 cks. 120 Fiume, 1 5 Bombay, 20 brls. 17 Malaga, 1 10 c. 2 q. 8 Calcutta, 21 15 2 96	
Ammonia (Liquid)— Curacao, 4 c. 2 q. £10	
Ammonium Carbonate— Salonica, 1 t. 10 c. £7 Montreal, 1 t. 10 47 Copenhagen, 1 21 Genoa, 2 10 70	
Ammonium Chloride— Naples, 1 t. 1 c. £33 Genoa, 3 8 59 Smyrna, 2 3 1 q. 70 Ibrail, 4 8 Larnaca, 4 6	

China Clay—

Baltimore,	300 cks.
Boston,	8,414
Calcutta,	160
Lisbon,	20 90 bgs.
Manzanilla,	38
Newport News,	160
Palermo,	2 cs.

Chromium Trioxide—

Philadelphia,	3 t.	£187
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Citric Acid—

New York,	10 c.	£58
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Coal Products—**Alizarine**

Sydney,	4 cks.
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Alizarine Oil

Lisbon,	3 cks.
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Aniline Salts

Boston,	20 cs.
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Cresote

Lisbon,	75 brls.
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Cresote Oil

Lisbon,	85 cks.
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Naphtha

Brisbane,	80 dms.
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Melbourne,	100
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Sydney,	14 cs.
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Pitch

Barcelona,	6 brls.
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Calcutta,	6
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Tar

Akassa,	6 brls.
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Galatz,	25
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Honolulu,	50
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Ibrail,	20
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Coal Products (otherwise undes.)—

Bordeaux,	60 brls.
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New York,	52 pks.
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Copper Sulphate—

Malta,	1 t.	£16
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Piræus,	11 c.	9
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Marseilles,	10 10	168
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Rotterdam,	10	9
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Sydney,	6 1 q.	7
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Tampico,	1 3	19
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Odessa,	3 6	51
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Melbourne,	3	48
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Trieste,	14 1	225
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Amsterdam,	4 3	65
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Bordeaux,	20 1	347
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Genoa,	10 14	180
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Galatz,	11 1	173
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Antwerp,	6	97
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Danzig,	2 13	45
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Barcelona,	1	16
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Ghent,	10	167
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Copenhagen,	26 9	420
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Valparaiso,	10	149
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New York,	13 18	222
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Copperas—

Constantinople,	4 t. 5 c.	£8
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M. Video,	6 10	9
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Syra,	7 4	2 q. 16
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Disinfectants—

Havana,	2 cks.	£9
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Guano—

Motril,	101 t. 11 c.	£700
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Iron Oxide—

Montreal,	3 t. 14 c.	£23
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Lime—

Accra,	20 brls.
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Magnesia—

Beyrout,	26 cs.
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Havre,	100
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Magnesium Carbonate—

Rouen,	1 t. 7 c. 1 q.	£4
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Magnesium Chlorate—

Rouen,	5 t. 4 c. 1 q.	£13
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Magnesium Sulphate—

Bombay,	40 bgs.
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Montreal,	30 brls.
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Oxalic Acid—

Newfairwater,	1 t. 2 c.	£46
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Melbourne,	3	5
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Boston,	3 7	3 q. 93
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Paint—

Accra,	40 kgs.
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Alexandria,	1 cs. 70
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Amsterdam,	4
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Antwerp,	160
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Bahia,	10
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Barbadoes,	11 pks.
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Bordeaux,	1	80 dms.
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Calcutta,	19 cks.
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Cape Town,	3
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Cavite,	16
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Colombo,	8
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Galatz,	694
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Gibraltar,	6
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Grand Lahou,	1
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Honolulu,	22 1,003
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Lagos,	183 pks.
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Manila,	701	300
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Maranham,	9
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Marseilles,	3
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Naples,	5
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New York,	120	240 bgs.
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Old Calabar,	48 pks.
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Para,	107
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Philadelphia,	250
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Piræus,	1 brl.
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Porto Alegre,	20
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Ponce,	3
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Praia,	50
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Rotterdam,	101
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Sagua la Grande,	2 cs.
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St. Nazaire,	20
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St. Petersburg,	50
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San Juan,	3	5 tcs.
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Valparaiso,	50 brls.
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Vera Cruz,	6
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Ylolo,	125
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Yokohama,	300
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Painters Colours—

Algoa Bay,	5 cs.
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Antofagasta,	43 pks.
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Bahia,	10 cks.
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Barbadoes,	1 brl. 5 kgs. 1 dm.
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Bremen,	100 bgs.
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Cape Town,	6 cs.
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E. London,	7
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Manila,	25
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M. Video,	162	10
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New York,	909 brls.
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Oporto,	44 cks.
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Paraffin Wax—

Gibraltar,	4 cs.
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Lisbon,	15
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Phosphorus—

Havana,	6 c.	£84
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Ponce,	1	7
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Hiogo,	4	65
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Potash—

M. Video,	19 c. 3 q.	£13
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Potassium Bichromate—

Pasages,	16 c. 1 q.	£48
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Malaga,	1 t. 4	2 48
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Smyrna,	1	46
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Piræus,	5 12	211
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Alexandria,	1 brl.	8
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Potassium Chlorate—

Havana,	7 t. 10 c.	£300
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New York,	10	288
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Rotterdam,	1	36
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Naples,	1	35
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Philadelphia,	5	178
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Copenhagen,	7 5	262
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Salt—

Adelaide,	10 t.
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Amsterdam,	140
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Antwerp,	60	6,800 sks.
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Axim,	200
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Baltimore,	485	7 c.
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Barbadoes,	100
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Benin,	7 8
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Boma,	5 7
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Boston,	550
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B. Ayres,	50
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Brisbane,	400
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Burutu,	300
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Calcutta,	7,197
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Cameroons,	3,190 bgs.
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Conakry,	400
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Copenhagen,	154 t.
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Delagoa Bay,	5
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Egwanga,	1,200
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Fuca,	900
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Ghent,	60	1,000
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Halifax,	260
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Hamburg,	112	300
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Honolulu,	50	80 tcs.
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Iceland,	152
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Lagos,	1,400 sks.
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Lyttelton,	325
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Loango,	1,100
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Matadi,	1,275
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Melbourne,	50	5,366
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Montreal,	20	8,224
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Muculla,	200
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Napier,	198
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Newcastle,	3,024
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N. Orleans,	20 cs.
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New York,	200
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Noqui,	20
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Orebak,	154
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Para,	312	10 c.
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Philadelphia,	500
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Piræus,	2	14
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Pt. Natal,	145
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Rangoon,	345
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Rotterdam,	64
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Rouen,	15
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Sierra Leone,	48
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Trinidad,	42	8
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Valparaiso,	370
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Victoria,	5
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Wiborg,	385
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Salt Cake—

Wellington, N.Z.,	4 t.	£7
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Saltpetre—

Maranham,	10 c.	£12
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Sheep Dip—

Calcutta,	2 t. 16 c. 2 q.	£63
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Soap—

Accra,	160 bxs.
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Akassa,	57 cs.
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Adelaide,	400
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Pitch—	
Antwerp, 2,103 c.	
Potassium Carbonate—	
Rio de Janeiro, 20 cks	
Pyridine—	
Rotterdam, 12 cks.	
Rosin—	
Bombay, 100 brls.	
Rio de Janeiro, 1 ck.	
Soap—	
Santos, 3 cks, 3 cs.	
Soda—	
Santos, 4 cks.	
Sodium Arseniate—	
Antwerp, 3 cks.	
Sodium Carbonate—	
Santos, 1 cs.	
Sodium Phosphate—	
Santos, 2 cks.	
Sodium Sulphate—	
Santos, 2 cks.	
Sulphuric Acid—	
Rio de Janeiro, 9 cs.	
Tallow—	
Boulogne, 1 ck.	
Rotterdam, 6	
Stockholm, 1	
Tar Oil—	
Antwerp, 10 cks. 3 dms.	

HULL.

Week ending July 10th.

Alkali—	
Hamburg, 1 ck.	
Ammonium Sulphate—	
Stettin, 202 bgs.	
Barium Carbonate—	
Stettin, 3,000 c.	
Bleaching Powder—	
Stettin, 14 cks.	
Caustic Soda—	
Abo, 3 cks.	
Wyburg, 4	
Chemicals (otherwise undescribed)	
Amsterdam, { 3 cks. 82 pks. 10 kgs.	
Antwerp, 20 3 cs.	
Bremen, 2 5 2	
Copenhagen, 2 10 10 pks.	
Dunkirk, 14 1	
Danzig, 10 1	
Gothenburg, 5 20 1	
Hamburg, 3 2	
Helsingfors, 3 2	
Konigsberg, 8 40 1	
Rotterdam, 1 10 kgs.	
Stockholm, 10 7 pks.	
Stettin, 1,644 slbs.	
Cottonseed Oil—	
Amsterdam, 211 c.	
Antwerp, 503	
Bremen, 35	
Copenhagen, 339	
Dunkirk, 200	
Gothenburg, 252	
Hamburg, 1,033	
Rotterdam, 256	
Stavanger, 38	
Stockholm, 298	
Creosote Oil—	
San Francisco, 133 tanks	
Dyestuffs (otherwise undescribed)	
Christiania, 1 ck. 5 kgs.	
Rotterdam, 1 ck.	
Linseed Oil—	
Amsterdam, 103 c.	
Antwerp, 65	
Bergen, 70	
Christiania, 2,409	
Copenhagen, 115	
Christiansand, 89	
Christiansund, 137	
Drontheim, 475	
Hamburg, 487	
Stavanger, 63	
Logwood—	
Stettin, 88 bgs.	
Paint—	
Antwerp, 4 cks. 25 dms.	
Bergen, 4 cks.	
Painters' Colours—	
Amsterdam, 1 cs. 4 dms.	
Antwerp, 24 cks. 1 5	
Abo, 7	

Bremen, 10	
Bergen, 20	
Christiania, 29 1 53	
Copenhagen, 3 2 5	
Drontheim, 17 182 pks.	
Danzig, 10 10	
Ghent, 15	
Hamburg, 5 1 15	
Helsingfors, 9	
Rotterdam, 4 1 7	
Stockholm, 3 6	
St. Petersburg, 51	
Wasa, 78	
Phosphate—	
Harburg, 549 t.	
Tallow—	
Amsterdam, 33 cks.	
Uleaborg, 26	
Tar—	
Amsterdam, 3 cks.	
Antwerp, 31 brls.	
Abo, 30	
Bremen, 5	
Gothenburg, 250	
Hamburg, 10	
Helsingfors, 100	
Wyburg, 25	
Wasa, 95	
Treacle—	
Stockholm, 36 kgs.	
Varnish—	
Christiania, 1 ck. 1 cs.	
Danzig, 1	
Ghent, 2	
Hamburg, 5	
Rotterdam, 1	
Riga, 1 dm.	
Stettin, 15	

GLASGOW.

Week ending July 15th.

Acetate of Lime—	
Melbourne, £20	
Albumen—	
Boston, £68. 15s.	
U.S.A., £68	
Alkali—	
Iloilo, £43	
Alumina—	
Rouen, £21	
Ammonium Sulphate—	
Amsterdam, £765	
Antwerp, 201 t.	
Barcelona, 10 5c.	
Castellon, 80 4½	
Gandia, 76 1	
U.S.A., 20 7	
Valencia, 340 7	
Bleaching Powder—	
Sydney, 6 t. 4c.	
Wellington, N.Z., 1 11½	
Borax—	
Melbourne, £20. 12s.	
Coal Products —	
Creosote Oil	
Russia, £750	
Pitch	
Antwerp, 125 t.	
Havre, 444	
"	
New York, £500	
Russia, 70	
Hamburg, 13 17c.	
Tar	
Caleutta, £100	
Christiania, 40	
Riga, 400 brls.	
U.S.A., 686	
Hamburg, 1 t. 5c.	
Penang, 316	
Singapore, 300	
Iloilo, £3. 15s.	
Coal Products (otherwise undes.)—	
Danzig, £401	
Hamburg, £397. 10s.	
Rotterdam, £1,423	
Cream of Tartar—	
Dunedin, £22	
Extracts—	
Barcelona, £35. 17s.	
Maloney, £70	
Gelatine—	
New York, £522	
Lead Acetate—	
Bombay, £48	
Lead Nitrate—	
Paris, £160	

Linseed Oil—	
Sydney, 17½ c.	
Valparaiso, 1 t.	
Fremantle, 1 10	
Wanganui, 1 ½	
Wellington, N.Z., 2	
St. John's, Nfld., 1	
Logwood—	
Port Lyttelton, £35	
Manganese—	
Basle, 11 t. 11½ c.	
Manure—	
Antwerp, 4 t. 13½ c.	
Trinidad, 103 2	
Penang, 24	
Paint—	
Valparaiso, £120. 15s.	
Dunedin, 59	
Fremantle, 113	
Cape Town, 22 10	
Manila, 188	
Samarang, 32	
St. John's, Nfld., 43 10	
Painters' Colours—	
Melbourne, qty.	
Newcastle, N.S.W., £101	
Sydney, 356	
Dunedin, 341	
Algoa Bay, 51	
Bombay, 23	
Iloilo, 23	
Paraffin Wax—	
Christiania, £12	
Barcelona, 89	
Russia, 310	
Potassium Bichromate—	
Bombay, £93	
Potassium Cyanide—	
Adelaide, £172	
Coquimbo, 162	
Melbourne, 250	
Potassium Prussiate—	
Antwerp, £70	
Rosin Oil—	
Amsterdam, £50	
Sheep Dip—	
Dunedin, £788	
Gisborne, N.Z., 121	
Port Lyttelton, 203	
Wellington, N.Z., 109	
Auckland, 90	
Soap—	
Bombay, 4 t.	
Transvaal, 5 10½ c.	
Sodium Bichromate—	
Barcelona, 15½ c.	
Bombay, £113	
Rouen, 5 t. ½	
Sodium Sulphate—	
Calcutta, 4 t.	
Starch—	
Barcelona, £99	
Rotterdam, 2 t.	
Sulphuric Acid—	
Manila, £42. 10s.	
Superphosphates—	
Dunedin, 300 t.	
Tallow—	
Christiania, 1 t. 7½ c.	
Drammen, 2½	
Rotterdam, 17 13	
Treacle—	
Gothenburg, 13 t. 17c.	
Algoa Bay, 1 10	
Turpentine—	
Manila, £54	
Ultramarine—	
U.S.A., £37	
Varnish—	
Fremantle, £68	
White Lead—	
Bechuanaland, £150	
B. Ayres, 53	

TYNE.

Week ending July 10th.

Alkali—	
Riga, 50 t. 1c.	
Copenhagen, 3 8	
Rotterdam, 19 5	
Bergen, 2 17	
Alum—	
Rotterdam, 15 t. 4c.	
Ammonium Sulphate—	
Antwerp, 35 t.	
Antimony—	
Rotterdam, 15 t.	

Arsenic—	
Barcelona, 3 t. 18c.	
Barytes—	
Barcelona, 13c.	
Benzine—	
Bergen, 6c.	
Bleaching Powder—	
Antwerp, 79 t. 18c.	
Christiania, 3	
Copenhagen, 4 19	
Rotterdam, 24 15	
Bergen, 15 4	
Castor Oil—	
Gefle, 17c.	
Caustic Soda—	
Antwerp, 3 . 15c.	
Hamburg, 12 14	
Bergen, 1 4	
Copenhagen, 7 13	
Barcelona, 44 11	
Copperas—	
Uleaborg, 1c.	
Litharge—	
Hamburg, 1 . 2c.	
Rotterdam, 11	
Stockholm, 4 3	
Magnesia—	
Christiania, 1c.	
Barcelona, 8 t. 17	
Paint—	
Antwerp, 2 t.	
Gefle, 1	
Barcelona, 14 .	
Pyridine—	
Rotterdam, 1 t. 1c.	
Salt—	
Aarhuus, 1 t.	
Soda—	
Antwerp, 5 t.	
Christiania, 11 13 .	
Aarhuus, 7 3	
Odense, 7 7	
Aalborg, 6 5	
Svenborg, 9 6	
Rotterdam, 12 7	
Stockholm, 25 12	
Soda Ash—	
Hamburg, 20 t. 7c.	
Sodium Bicarbonate—	
Christiania, 3 t.	
Sodium Hyposulphite—	
Antwerp, 1 t.	
Sulphur—	
Antwerp, 7 . 3c.	
Christiania, 50	
Riga, 125	
Tar—	
Hamburg, 20 t.	
White Lead—	
Uleaborg, 3c.	
Stockholm, 5 t. 4	

GOOLE.

Week ending July 7th.

Coal Products (otherwise undes.)—	
Amsterdam, 1 ck.	
Antwerp, 1 cs.	
Hamburg, 86	
Rotterdam, 75	
Boulogne, 49 5 tins 3 pks.	
Dyestuffs (otherwise undescribed)	
Amsterdam, 1 ck.	
Ghent, 7	
Rotterdam, 75	
Maure—	
Ghent, 191 bgs.	
Pitch—	
Antwerp, 151 t.	
Salt Cake—	
Ghent, 100 t.	

GRIMSBY.

Week ending July 10th.

Coal Products (otherwise undes.)—	
Hamburg, 3 bls.	
Colours—	
Antwerp, 1 ck. 24 cs.	
Hamburg, 2 1 13 pks.	
Malmo, 17	
Rotterdam, 3	
Quicksilver—	
Port au Prince, 300 bls.	
Soap—	
Dieppe, 7cs.	

PRICES CURRENT.

WEDNESDAY, JULY 21ST, 1897.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary

Acids:—

	£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/10½	& 8/9
„ Glacial	„	40/-	
Arsenic S.G., 2000°	„	1 4 0	
Fluoric	per lb.	0 0 3½	
Muriatic (Tower Salts), 30° Tw.	per bottle	0 0 10	
„ (Cylinder), 30° Tw.	„	0 3 0	
Nitric 80° Tw.	per lb.	0 0 1½	
Nitrous	„	0 0 1½	
Oxalic	nett	0 0 3½	
Phosphoric, 1750°	„	0 0 11½	
Picric	„	0 0 11	
Sulphuric (fuming 50 %)	per ton	15 10 0	
„ (monohydrate)	„	5 10 0	
„ (Pyrites, 168°)	„	3 0 0	
„ „ 150°	„	1 5 0	
„ (free from arsenic, 145°)	„	1 7 6	
Sulphurous (solution) S.G. 1025	„	3 0 0	
Tannic (pure)	per lb.	0 1 2½	
Tartaric	„	0 1 1	
Arsenic, white powdered	nett per ton	22 0 0	
Alum (loose lump)	„	4 10 0	
Alumina Sulphate (pure)	„	4 2 6	
Aluminoferrous	„	2 3 6	
Aluminium (Ingot metal 98/99¼ %	nett	148 0 0	
Ammonia, Anhydrous	per lb.	0 1 3	
„ 880=28° B.	„	0 0 2¾	
„ =24° B.	„	0 0 1¾	
„ Carbonate	nett	0 0 3	
„ Muriate	per ton	18 0 0	
„ (sal-ammoniac) 1st & 2nd	per cwt.	33/- & 31/-	
„ Nitrate	per ton	31 0 0	
„ Phosphate	per lb.	0 0 3¾	
„ Sulphate (grey) London	per ton	7 10 0	
„ (grey) Hull	„	7 10 0	
Aniline Oil (pure)	per lb.	0 0 7¼	
Aniline Salt	„	0 0 6¾	
Antimony	per ton	29 15 0	
„ (tartar emetic)	per lb.	0 0 9	
„ (golden sulphide)	„	0 0 10	
Barium Chloride	per ton	6 12 6	
„ Carbonate (native)	„	3 10 0	
„ Sulphate (native levigated)	„	42/6 to 65/-	
Bleaching Powder, 35 %	nett	6 7 6	
„ Liquor, 7 %	„	3 10 0	
Bisulphide of Carbon	„	12 0 0	
Chromium Acetate (crystal)	per lb.	0 0 6	
Calcium Chloride	per ton	2 2 6	
China Clay (at Runcorn) in bulk	„	15/- to 30/-	
Coal Tar Products and Dyes:—			
Alizarine (artificial) 20 %	nett per lb.	0 0 6¾	
Magenta	„	0 3 9	
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0 0 6½	
Benzol, 90's	per gallon	0 2 1	
„ 50/90	„	0 2 1	
Carbolic Acid (crude 60°)	per gallon	0 1 11	
„ (crystallised 40°)	per lb.	0 0 7½	
„ (liquid 95/97%)	per gallon	0 1 0	
Creosote (ordinary)	„	0 0 2	
„ (filtered for Lucigen light)	„	0 0 2½	
Crude Naphtha 30 % @ 120° C.	„	0 0 11	
Grease Oils, 22° Tw.	per ton	2 15 0	
Pitch, f.o.b. Liverpool or Garston	„	1 1 0	
Solvent Naphtha, 90 % at 160°	per gallon	0 1 6½	
Copper	per ton	47 12 6	
„ Sulphate	„	16 0 0	
„ Oxide (copper scales)	„	44 10 0	
Glycerine (crude)	„	30 0 0	
„ (distilled S.G. 1250°)	„	60 0 0	
Iodine	nett, per oz.	0 0 7½	
Iron Sulphate (copperas)	per ton	1 10 0	
„ Sulphide (antimony slag)	„	2 0 0	
Lead (sheet) for cash	„	13 10 0	
„ Litharge Flake (ex ship)	„	14 15 0	
„ Acetate (white)	„	22 0 0	
„ „ brown	„	15 0 0	
„ Carbonate (white lead) pure	„	16 15 0	
„ Nitrate	„	19 0 0	

	£	s.	d.
Lime, Acetate (brown) (ex ship)	per ton	4 15 0	
„ „ (grey) (ex ship)	„	8 5 0	
Magnesium (ribbon and wire)	per oz.	0 2 3	
„ Chloride (ex ship)	per ton	2 10 0	
„ Carbonate	per cwt.	1 17 6	
„ Calcined Magnesia	per ton	9 0 0	
„ Sulphate (Epsom Salts)	per ton	2 15 0	
Manganese, Sulphate	„	16 0 0	
„ Borate	per cwt.	2 10 0	
„ Ore, 70 %	per ton	3 10 0	
Methylated Spirit, 61° O.P.	per gallon	0 1 8	
Naphtha (Wood), Solvent	„	0 2 9	
„ „ Miscible, 60° O.P.	„	0 3 6	
Oils:—			
Cotton-seed	per ton	16 0 0	
Linseed	„	16 15 0	
Stearine	per ton	19 10 0	
Phosphorus (yellow)	per lb.	0 2 2	
„ (red)	„	0 2 8	
Potassium (metal)	per oz.	0 3 7	
„ Bichromate	nett per lb.	0 0 4½	
„ Carbonate, 90% (ex ship)	per ton	16 10 0	
„ Chlorate	per lb.	0 0 4	
„ Cyanide, 98%	„	0 0 10	
„ Hydrate (Caustic Potash) 90 %	per ton	23 15 0	
„ „ (Caustic Potash) 75/80 %	„	20 10 0	
„ „ (Caustic Potash) 70/75 %	„	19 15 0	
„ Nitrate (refined)	per cwt.	1 1 6	
„ Permanganate	per cwt.	3 15 0	
„ Prussiate Yellow	per lb.	0 0 5½	
„ Sulphate, 90 % (ex ship)	per ton	9 15 0	
„ Muriate, 80 % (do.)	„	8 10 0	
Silver (metal)	per oz.	0 2 3½	
Sodium (metal)	per lb.	0 2 11	
„ Carb. (refined Soda-ash) 48 %	nett per ton	4 15 0	
„ „ (Caustic Soda-ash) 48 %	„	4 5 0	
„ „ (Carb. Soda-ash) 48 %	„	4 0 0	
„ „ (Alkali) 58 %	„	3 17 0	
„ „ (Soda Crystals)	„	2 5 0	
„ Acetate (ex-ship)	„	12 5 0	
„ Arseniate, 45 %	„	14 7 6	
„ Chlorate	per lb.	0 0 4¾	
„ Borate (Borax)	net, per ton	14 15 0	
„ Bichromate	per lb.	0 0 3¾	
„ Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	„	8 15 0	
„ „ (74 % Caustic Soda)	„	8 0 0	
„ „ (70 % Caustic Soda)	„	7 2 6	
„ „ (60 % Caustic Soda)	„	6 2 6	
„ „ (pure liquor 90° Tw.)	„	3 12 6	
„ „ 77/78 % powdered (99 % hydrate)	„	12 10 0	
„ Bicarbonate	„	6 10 0	
„ Hyposulphite	„	5 0 0	
„ Manganate, 25%	„	15 0 0	
„ Nitrate (95 %) ex-ship Liverpool	per cwt.	0 7 6	
„ Nitrite, 98 %	per ton	30 0 0	
„ Phosphate	„	10 10 0	
„ Silicate (glass)	per ton	4 10 0	
„ „ (liquid, 100° Tw.)	„	3 10 0	
„ Stannate, 40 %	per cwt.	3 2 9	
„ Sulphate (Salt-cake)	per ton	0 19 0	
„ „ (Glauber's Salts)	„	1 7 6	
„ Sulphide	„	6 15 0	
„ Sulphite	„	5 0 0	
Strontium Hydrate, 100%	„	10 1 0	
Sulphocyanide Ammonium, 95 %	per lb.	0 0 6	
„ Barium, 95 %	„	0 0 6	
„ Potassium	„	0 0 6	
Sulphur (Flowers)	per ton	7 1 0	
„ (Roll Brimstone)	„	6 1 0	
„ Brimstone: Best Quality	„	4 1 0	
Superphosphate of Lime (26%)	„	2 0 0	
Tallow	„	18 0 0	
Tin Crystals	per lb.	0 0 4½	
„ English Ingots	per ton	66 0 0	
Zinc (Spelter)	„	17 0 0	
„ Chloride (solution, 100° Tw.)	„	4 1 0	
„ Sulphate, Crystal	„	5 2 6	

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Contents.

	PAGE		PAGE
Current Topics	65	Storage of Carbide of Calcium	70
The Bradford Tar Still Explosion..	66	The United States Tariff.....	71
The Patent List	67	The Ammonium Sulphate Scheme..	71
Abstracts of Latest Complete Spec-		Trade Notes	72
ifications	67	Tar and Ammonia Products	72
Correspondence	67	Miscellaneous Chemical Market ..	72
Dyes and Dyeing in Bengal	67	Report on Manure Material	72
Official Memoranda	68	Liverpool Oil and Colour Market..	72
Reports of Companies	69	The Metal Markets	72
Parliamentary Jottings	69	Hull Paint, Oil, and Colour Report	73
The Petroleum Hair Wash Fatality	69	West of Scotland Chemicals	73
Combined Vacuum and Compre-		Tyne Chemical Report	73
sion Pump	70	New Companies.....	74
Report on the Ardeer Explosion ..	70	Imports.....	74
The "Victorian" Steam Jacketted		Exports	77
Mill	70	Prices Current	80

LATE ADVERTISEMENTS.

TENDER.

COUNTY BOROUGH OF WIGAN.

TO TAR DISTILLERS AND OTHERS.

THE Gas Committee of the Wigan Corporation invite TENDERS for the Surplus TAR produced at their Gas Works for One Year, commencing on the 1st of September next, and terminating on the 31st of August, 1898.

Particulars and Form of Tender may be obtained on application to the undersigned.

The highest or any Tender not necessarily accepted.

Tenders, sealed and endorsed "Tar," to be delivered to J. J. Charnock, Esq., Town Clerk, on or before the 17th of August next.

Borough Gas Works, Wigan,
July 27th, 1897.

JOS. TIMMINS,
Engineer.

TENDER.

MANCHESTER CORPORATION GAS WORKS.

SPENT OXIDE.

THE Gas Committee of the Corporation of Manchester are prepared to receive TENDERS for the purchase and immediate removal of about 200 tons of SPENT OXIDE from the Rochdale-road Gas Works.

The Committee do not bind themselves to accept the highest or any Tender.

Sealed Tenders, addressed to the Chairman of the Gas Committee, and endorsed "Tender for Spent Oxide," must be delivered at the Offices of the Gas Department not later than 9 a.m. on Friday, the 6th proximo. Forms of Tender and samples of the Oxide may be obtained on application to Mr. Charles Nickson, Superintendent of the Gas Department.—By order,

Town Hall, Manchester,
30th July, 1897.

WM. HENRY TALBOT,
Town Clerk.

Notices.

All communications for the *Chemical Trade Journal* should be addressed, and Cheques and Post Office Orders made payable to—

DAVIS BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

"Expert, Manchester."

NATIONAL TELEPHONE, 3060.

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Prepaid Advertisements of Situations Vacant, Premises on Sale or To be Let, Miscellaneous Wants, and Specific Articles for Sale by Private Contract are inserted in the *Chemical Trade Journal* at the following rates:—

30 Words and under 2s. 6d. per insertion.
Each additional 10 words..... 6d. "

CURRENT TOPICS.

DYNAMITE IN THE TRANSVAAL.

THE question of the cost of dynamite in the South African Goldfields, and the influence of the dynamite monopoly vested in the Transvaal Dynamite Co., has long been freely debated, but the developments of the last few months have thrown more light on the matter than all the previous discussion.

Monopolies in the Transvaal have not been very successful. The cyanide case, for instance, has a history that is now pretty generally known, while the signal failure of the attempt to start the manufacture of potassium cyanide locally, is all too familiar to certain New York and German firms, if not so well known to the public.

Whatever the price of dynamite may be, however, the manufacturing Company seem to have a true grievance against the Government. The works were erected within the time specified in the contract, and the Government acknowledged the fact. The works included sulphuric acid and nitric acid plants, and four separate plants for the production of dynamite. The latter are collectively capable of turning out 240,000 cases a year.

Owing to the difficulties of manufacture (which, in any case, are great on account of the danger) being excessive, because the staff and operatives had all to be trained and to serve an apprenticeship, as it were, the Company desired to limit the output to 80,000 cases to start with, proposing to gradually increase the turn out year by year. The Government seemed to have agreed, after making a proviso that anything in excess of the amount should be imported, but now they contend that the works were not erected up to time, and that although they are not desirous on this account to cancel the contract, they think they should be allowed to reduce the selling prices, or have a larger share in the profits of the Company.

No doubt it would be very nice for the Government, but it is scarcely surprising that the Company view the matter as a breach of faith. They show that they have supplied ample dynamite for the gold mining industry (whether made or imported matters not), and therefore are entitled to the continuance of the benefit in price, which was only to be anticipated when the arrangement with the Government was made.

As, moreover, their financial position is such as to show that, dear or not dear, they have not been getting fat on the price, it hardly seems fair for the Pretoria authorities to shirk their part of the contract as soon as it begins to cut against their interests, instead of fostering them.

CALCIUM CARBIDE SCORES ONE.

There is yet hope for the future of calcium carbide. We have not been alone in our protest against the indiscriminating inclusion of the carbide under the Petroleum Acts. Apart from unbiassed advocates there have also been active workers

among those who have a decided interest in the use of the carbide extending. It is very pleasing, therefore, to be able to record that the endeavours of the Acetylene Illuminating Co., Ltd., in the shape of pamphlets and personal pressure, have resulted in the Order in Council affecting the carbide having been sufficiently relaxed on the 7th inst. to allow 5lbs. to be stored without a licence if packed in "separate, substantial, hermetically closed metal vessels," containing one pound each. Naturally, if this particular way of storing is not adhered to, the right to store without licence is wholly forfeited. The exact text of the amended order appears elsewhere in this issue.

THE PERFECT SEWAGE PROCESS AGAIN.

We were expecting it! Like the first cuckoo or the last swallow, it recurs periodically, and the pre-eminence of sewage matters of late made us fear the worst. It is at Hendon this time. It is described thus:—

An aerated biological filter, a dozen feet square, and composed of four walls, built of ordinary agricultural drainage pipes, enclosing a mass of coke more or less finely broken for filtration purposes, seems to accomplish all that is necessary in the most satisfactory manner. On to the top of this filter foul sewage, innocent of any chemical treatment whatsoever, and without any separation of sludge or solid matter, is run in small open troughs, issuing from the base of the filter in about three-quarters of an hour as a bright, clear, and perfectly inodorous effluent, indistinguishable from pure spring water. No fine sand is used. The sewage is not merely mechanically screened—by which process simple clarification might be effected in the removal of impurities in suspension—but actual purification of matter, both in solution and in suspension, has come about. There may possibly remain certain practical working details requiring further study and development, but the process, as it is, is apparently so nearly automatic and so exceedingly simple in its application that little more can be needed to perfect it.

We are told the area of the filter, but what was its cubical contents? Possibly it was a 12 ft. cube. We must not lose sight of such a "simple" process, nor shall we. It shall be investigated. We are also anxious to compare the sewage and the population of Hendon with that of Manchester or Salford. But how pregnant with difficulties and indefiniteness is the last sentence of the paragraph we quote?

THE BRADFORD TAR STILL EXPLOSION.

BOARD OF TRADE INQUIRY.

AN inquiry was held on Tuesday, this week, at the Manchester Town Hall, by Mr. Howard Smith, barrister-at-law, and Mr. J. H. Hallett, consulting engineer, on behalf of the Board of Trade, into the causes and circumstances of the explosion of a tar still at the Bradford Chemical Works, near Manchester, on the morning of the 17th June, whereby two men were killed (*C.T.J.* 528, p. 2). Mr. Gough presented the case for the Board of Trade, and the owner of the still which exploded (Mr. Hamor Lockwood) was represented by Mr. Rylands (Messrs. Boote and Edgar). Mr. W. Cobbett watched the proceedings on behalf of the relatives of the deceased men. The still in question was an iron cylindrical vessel, with a hemispherical top and a partially dished bottom, the cylindrical portion being 12ft. in diameter and 7ft. in height, and the plates 7-16in. in thickness. The still was fitted with a charging tap, through which the tar or anthracene oil could be run in by gravity from storage tanks, or pumped in by a small donkey pump. There was a dip hole at the top for testing by means of a rod the height of the liquor in the still, and for ascertaining how much the liquor expanded during the distillation. This dip hole was closed by means of a plug. A swan neck was fixed on the top of the still for carrying off the gases through a range of cast-iron piping 24ft. in length, to the condenser. At the end of this range of piping immediately over the condenser, a small safety valve was fixed. The condenser consisted of a cylindrical tank 6ft. in diameter and 7ft. 6in. in height, standing on brickwork, and containing a worm 3ft. 6in. in diameter, and composed of ten coils of pipe of 4in. bore. During the process of distillation the man in charge of the still, it was stated in evidence, should see that the coil was clear.

When the fire under the still was alight and the contents of the still became heated he should note that a certain distillate passed through the end of the coil. If that sign were not present it was clear that the coil was choked through the solidification of the anthracene oil which had previously been passing through, and it was the man's duty then to lift the plug from the vent hole at the top of the still, and if he found his suspicions verified he ought to put out the fire immediately. What was done by the stillman immediately before the explosion there was no evidence to show, as he and another man were killed. The explosion occurred about half-past ten on the morning of the 17th June. About twenty tons of tar had been run into the still by eight o'clock or thereabouts; the fire was then lighted, and all was supposed to be right when the still exploded. The bottom of the still was ripped all round, and the shell was projected over a wall ten feet high and landed about thirty yards away. The tar set free from the still ignited, and a fire raged on the premises for an hour before the fire brigade succeeded in subduing it.

At the conclusion of the evidence, Mr. Gough put the following questions for the consideration of the Court:—(1) Was the still properly constructed, and was it of sufficient strength for the purpose for which it was intended? (2) Was it fitted with proper and sufficient mountings, and was the safety valve placed in a proper position? (3) Was the still carefully worked on the night of the 15th-16th June, and were proper measures taken to prevent solidification of the anthracene in the pipe or condenser? (4) Was it possible for the stillman to ascertain whether the outlets were clear, either before admitting tar into the still or before lighting the fire on the morning of the 17th June. (5) Were proper measures taken to ensure that the still was being worked under safe conditions? (6) What was the cause of the explosion and loss of life? (7) Whether blame attaches to Mr. David B. Jones (manager), and to Mr. Hamor Lockwood (owner), or to either of those gentlemen. The Commissioners were of opinion that the explosion was caused by the pipe leading from the still to the condenser being sealed up—the exact point they were not able to say—and that this stoppage was caused by the congealment of the anthracene therein, which congealment was due to a fall of temperature, the pipe being exposed to the air. The still therefore could not be freed from the pressure which was accumulated after the lighting of the fire, as the dip-hole plug, which was supposed to act as a safety valve, was found in the hole after the explosion. According to the evidence of Mr. Buckwell, engineer-surveyor to the Board of Trade, the pressure at which he would expect the still to burst would not be greater than from 8lb. to 10lb. per square inch. In answer to the questions asked by the Board of Trade, the Commissioners had to state that in their judgment the still was properly constructed and of sufficient strength for its purpose. It was not, however, fitted with proper and sufficient mountings, for it had no safety valve, those which were supposed to do duty as safety valves being of no real value. The still should have been fitted with a safety valve of sufficient area to free it from all accumulations of pressure, and that valve should, in their opinion, have been placed on the swan neck. As, however, it was not customary to fit these stills with safety valves in that fashion, and as Mr. Lockwood had evinced a readiness to comply with any suggestion for ensuring greater safety, the Commissioners were of opinion that no blame attached either to him or to his manager, Mr. Jones. Under these circumstances, they made no order as to costs. They remembered that stills fitted like the one which exploded had been worked by Mr. Lockwood and others for many years, and although they condemned the absence of an efficient safety valve—because they thought had there been one in this case the explosion would not have occurred,—they did not think that either Mr. Lockwood or Mr. Jones was to blame.

PARIS INTERNATIONAL FIRE PREVENTION CONGRESS.—In conjunction with this Congress there is being organised an International Exhibition of engines, inventions, products and plans for the prevention of fire, and fire extinguishing appliances and materials. Manufacturers, engineers, and inventors are invited to exhibit their machines and inventions there, for which purpose a large building will be placed at their disposal, next to the Congress Hall. In this way all scientific discussion will be strengthened by practical demonstration. The importance of the Congress is reflected by the fact that one hundred and fifty Senate deputies, municipal councillors of Paris, and scientific men of the Government have already joined the Committee. All further information can be had from the British Secretary, Mr. Frederick Hoare, of College Chambers, 249¹/₂, High Holborn, E.C.

SMOKE PROSECUTIONS.—At the Manchester City Police Court, on Wednesday, before Dr. Enrys-Jones and Mr. Grimshaw, the following persons were summoned at the instance of the Manchester Corporation for allowing black smoke to escape from their chimneys:—Galloways, Limited, Bennett-street, fined 20s. and costs; William Lockett, Brook-street, fined 60s. and costs; Kerr and Hoegger, Limited, Grimshaw-lane, fined 20s. and costs. Orders of abatement were made against three other firms.

The Patent List.

This list is compiled from Official sources in the Manchester Local Laboratory, under the immediate supervision of Mr. E. Davis and Alfred R. Davis, who report professionally the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

the Motive Power of Moving Sewage. D. G. Gordon. 16,468. July 12.
 ratory Masks. F. Coquy and G. Mitchell. 16,478. July 12.
 ber, Acid, and Fire-resisting Material. J. Stocker and H. Zander. 490. July 12.
 ing Furnace with Desiliconising Bath. B. Talbot and S. Purcell. 521. July 12.
 Annealing Ovens. A. J. Boulton. 16,611. July 13.
 ic Batteries. C. Therge. 16,665. July 13.
 n Burner for Liquids. R. Adam. 16,733. July 14.
 er for Extracting Ammonia. J. Stevenson. 16,751. July 15.
 g Exhaust Steam into Boilers. W. H. Bushell and L. R. S. Tomalin. 169. July 15.
 Tanning Process. C. Michell. 16,804. July 15.
 ng Complex Sulphide Ore. F. Ellershausen. 16,808. July 15.
 vements in Filters. P. E. Hodgkin and the Pulsonometer Eng. Co. 186. July 16.
 Traps. E. and J. R. Yates. 16,904. July 17.
 etting and Compressing Apparatus. A. Ivan Vriesland. 16,907. July 17.
 Furnaces and Destructors. F. F. Bennett and J. Phythian. 16,921. July 17.
 Welding Powder. H. J. Kloos. 16,922. July 17.
 ng Towns' Refuse and Obtaining By-products. C. J. T. Dixon, Phythian, and F. F. Bennett. 16,925. July 17.
 Tanning Process. J. T. McQuinn. 16,927. July 17.

EXTRACTS OF LATEST COMPLETE SPECIFICATIONS.

These abstracts are specially prepared for the Chemical Trade Journal, ALL RIGHTS of publication are RESERVED. This is the earliest of abstracts of Chemical and allied patents accessible to the

ements in Furnaces for Consuming, Deodorizing and Rendering noxious, Foul Air, Smoke, and Objectionable or Dangerous Gases generally. S. G. Smith, 1,016, Putnam-avenue, Plainfield, U.S.A. Eng. 9,905. April 20, 1897.

There is nothing very novel about this invention. The horizontal boiler is set with the firegrate in front, behind which is a flue containing a water heating coil. From the bottom of this flue furnace gases pass up to the boiler tubes, entering at the end from the fire grate. The chief feature is that the top of the boiler is entirely enclosed by a saddle-like flue which communicates with the fire grate and combustion chamber. Into this flue any noxious gases are introduced by a fan or steam jet, through a device which also allows enough air to effect complete combustion to be aspirated at the same time. There are two drawings. It is claimed that the heating effect of the fuel is increased by this arrangement of the parts.

ements in Linoleum Drying and Oxidising Apparatus. A. Hardt, Bedburg, near Düren, Germany. Eng. Pat. 10,867. May 1, 1897. The disadvantages of the hanging system of drying are detailed at special stress being laid on the damage by the rails on which the linoleum is suspended, the waste amounting to nearly four square feet every 300 or so. The drying room is therefore filled with a number of hurdles or wire shelves. The fresh linoleum is drawn in by a wire and clamp to the full length of the shelf, and then cut off. It is drawn into the shelf next below, and so on, the feeding being adjustable to the level of each shelf, as are also the rails for the drawing-in wire. In this way the attendant is only required to be in the drying room a few minutes at a time to adjust the rails and pulleys. There are four figures, one of which shows how the rails are slotted to receive the drawing wire, and so prevent the linoleum being damaged.

ements in the Treatment of Ores containing Zinc. A. M. Clark, Manchester-lane, W.C. (communicated by E. A. Ashcroft, 34, Queen-street, London). Eng. Pat. 11,776. May 21, 1896.

formation of spongy deposits in the electro deposition of zinc is overcome by using an electrolyte in which an oxy-salt exists. To this the roasted ore is treated with ferric chloride or other salt, forming an aqueous solution of a zinc salt. A portion of roasted ore is heated to 650° C., with finely powdered carbon to form the zinc. The product so obtained is dissolved in the aqueous solution to form an electrolyte. By feeding in these two constituents in regulated proportions the process of deposition can be made continuous.

A Still or Tank for the Distillation, Boiling and Holding of Acids, Alkali and other Corrosive Liquids. D. Bray Cinderford, Glos. Eng. Pat. 16,877. July 30, 1896.

The tank is made of stone, the joints being grooved and rubber packed. The whole is held together by tie-rods, and the contents heated or blown through a solid or perforated coil placed in the bottom of the tank. There are six figures, but they are scarcely necessary after mentioning the fact that the apparatus in its entirety is really a reproduction of the familiar Weldon and native liquor stills.

Correspondence.

* We do not hold ourselves responsible for the opinions expressed by our correspondents.

A DISCLAIMER.

(To the Editor of the Chemical Trade Journal.)

SIR,—In the report appearing in the *Chemical Trade Journal* of the 24th inst., of the visit of the Society of Chemical Industry to the works of Messrs. Levinstein, Limited, the following statement appears with regard to the concentration of sulphuric acid on the said works:—"The rectifying plant is constructed on the company's own patents, and was rectifying the chamber acid up to 96%, 97% and 98% acid." Now, as this statement is misleading and likely to deceive the public, I beg to state that the only process upon these works used for the concentration of sulphuric acid is that known as "*Webb's Patent Continuous Process, A.D., 1891, No. 2,343*," which consists of a series of beaker vessels placed on steps in a heating chamber, each of these vessels being made with an overflow spout, and having placed in it a tube reaching down to its bottom from the spout of the next higher vessel (*vide* patent office specification), and that a licence was granted by me in the year 1892 to Messrs. Levinstein for the use of my patented process.

I should be glad by your inserting this letter of explanation in your next issue in justice to myself.—I remain, sir, yours obediently,

Queen's Chambers, 7, Market-st.,
 Manchester, 28th July, 1897.

THOMAS G. WEBB.

DYES AND DYEING IN BENGAL.

THE Bengal Government has issued an interesting report on dyes and dyeing in Bengal by Mr. N. Banerji, Assistant Director of Land Records and Agriculture in that province, from which it appears that the industry has almost wholly lost its place in India owing to the use of cheap European dyes, which, though not so fast as native dyes, are easily used, are cheaper, and more brilliant. Formerly a Bengali wanting to wear a coloured cloth was obliged to go to the dyer, who alone knew the complicated processes by which colours could be produced from the native dyes; but now he mixes European chemical powders for himself and dips his cloth into a coloured solution of the powders, and it is soon ready for use. Another reason assigned by Mr. Banerji for the decline of native dyeing is the want of ingenuity in the production of colours and designs, and a dislike to changing old crude processes. Silk dyeing is all but extinct in most of the silk districts of Bengal, and in almost every district cotton dyeing has seriously declined. Certain goods dyed in parts of Midnapur still command a sale, the colours being effectively arranged, but the cloth is not much worn on account of its light texture; the Santipur embroidered cloth, woven and dyed in Nadia, is also in demand, but imported dyes are coming into use even here. Carpet-weaving and dyeing have suffered also. At one time these formed a flourishing industry in Rangpur, Patna, Gaya, and Muzaffarpur; but now only a few families in these places prepare the coloured threads for weaving carpets. The industry still flourishes in one of the quarters of Patna city, where coloured carpets to the value of half a lakh of rupees are produced annually. Wool-dyeing to a nominal extent is carried on in the Bhagalpur and Patna divisions, and there is also an insignificant industry in dyeing wood, pith, and other articles. Lac bangles and toys are made and dyed in various places, but the demand is small. Very little colour printing is now done in Bengal, and in India, as in Great Britain, the old domestic industries, with their crude methods, cannot withstand the competition of the factory, with its trained and specialised workers. Mr. Banerji describes the stuffs, processes and utensils of native dyers and colour-printers, the profits of the trade, and the markets. The report has a number of excellent illustrations.

THE SEWAGE QUESTION.—We notice that the President of the Local Government Board has now decided to appoint a Departmental Committee to inquire concerning the disposal of the sewage of large towns and cities.

Official Memoranda.

(From the Board of Trade Journal.)

LIQUID FUEL FOR STEAMSHIPS.

THERE are signs pointing in the direction of changes in steam navigation, but exactly what these changes are to be, and how the modern steamship will be affected thereby, cannot yet be foretold.

The "Iron Age" is of opinion that an evolution may be looked for in the direction of the substitution of liquid fuel for coal. A good deal has already been accomplished in this direction by both national and merchant navies, and more is to be confidently expected. It is necessary to distinguish between the use of naphtha and petroleum as liquid fuel, and the astatki or mazut which is more generally employed. This residuum is a yellowish brown, thick, oily liquid, resembling somewhat light coloured molasses. It is perfectly non-inflammable up to 350° Fahr., can be carried safely in large quantities, does not deteriorate by being stored or exposed, does not evaporate, and is not detrimental to metal tanks or to the inside of a ship.

Such liquid fuel is extensively used in steamers plying on the Caspian Sea and in the locomotives employed near that region; of course the whole country thereabouts being an oil well, the naphtha is cheap and very easy to obtain, and the conditions governing its use are far different from those which hold in other portions of the world under different circumstances. Russia, therefore, has had more practical experience in the use of liquid fuel than any other country. She has further made the most extensive experiments in the burning of petroleum fuel in war ships, and especially in torpedo boats, where the success has been sufficiently marked to decide the Government to use it almost entirely in this small craft and to some extent in their coast defence vessels.

In America the use of liquid fuel was attempted experimentally last year in a small torpedo boat, and the results, all things considered, were in the main quite satisfactory. Such, too, has been the reported experience everywhere, for all naval powers have experimented more or less with liquid fuel. Italy has adopted petroleum fuel for use in her torpedo boats, and is introducing it as an auxiliary fuel in some of her larger vessels. Germany has also decided to supply it to her torpedo boats, and has constructed large reservoirs at Wilhelmshaven for its storage. France has made many attempts looking to its employment, though she has not yet definitely adopted it.

Many different ways of using petroleum fuel have been put to the test and have been found wanting in some particular. It should be stated, however, that since in nearly every case the boiler to be fired with residuum was one which was originally designed to be fired with coal, undoubtedly many drawbacks resulted from this cause. Again, the boiler and steam fittings were for controlling the ordinary feed water, drafts, etc., common to all coal burning furnaces, and these makeshifts must have interfered more or less with the success of the experiments.

Three methods have been tried to employ liquid fuel for steaming purposes, which may be generalized as follows: 1. The floor of the ordinary furnace, after removing the grate bars, was covered over with some porous substance like asbestos through which the oil was introduced from underneath; this substance becoming saturated with oil burned from the surface. 2. The fuel was conducted to the furnace in a gaseous state; this method was experimented with as far back as 1867 on board the United States gunboat "Palos;" the fault found with gas furnaces was the stopping up of the supply pipes, the residuals not vaporizing. 3. The oil is sprayed into the furnaces by means of steam or air blasts.

The last method is the one which has been most experimented with, and it is the one which has given the most satisfactory results. In fact, it has superseded the other methods. The primary question to be settled is, whether in order to pulverise the naphtha fuel it is better to make use of air or of steam. The objection urged against the use of air is the amount of space the compressors would occupy in the vessel and their weight. On the other hand, the objection raised against the employment of steam is that an undue quantity of it would have to be constantly supplied to overcome that which must be unavoidably lost by escape, no condensers having yet been devised capable of supplying this loss.

In the equipment for burning liquid fuel fitted to the "Maine's" torpedo boat, fire bricks partially grooved across one face were laid on the ordinary grate bars at an angle of 45 degrees, thereby forming air ducts over the entire surface of this corrugated bed. The liquid fuel was distributed over this bed in a fan-shaped spray, and was there heated to incandescence, the air passing through the grooves and uniting with the gases of the oil spray, making a perfect oxyhydrogen flame. The pulverization of the oil was effected by compressed air.

In the Russian experiments, which were more thorough and comprehensive than those made in the United States, the torpedo boat "Wiborg" was used and steam was employed for breaking up the

liquid fuel, a specially designed evaporator giving highly satisfactory results.

The advantages which would follow the adoption of liquid fuel for use in torpedo boats are many, and are more marked than would be the case with larger vessels. The principal are the rapidity with which the bunkers could be filled; the storage of the oil in such parts of the boats as were unfit for cargo; the diminution in the number of men necessary to tend the fires, and of the physical fatigue of the firemen. A modern torpedo boat, which at a given speed could go 4,000 miles, would, if she had in place of coal the same weight in oil fuel, steam 7,000 miles.

PRODUCTION OF CELLULOSE IN SWEDEN.

The production of cellulose in Sweden has, according to a statement in *Le Monde Economique*, rapidly increased since 1867. The following table shows the amount produced in quinquennial periods from 1867 to 1896.

Periods of 5 years.	Production by Mechanical Method. Tons.	Production by Chemical Method. Tons.
1867-1871	61,700	—
1872-1876	97,800	5,350
1877-1881	140,000	18,240
1882-1886	194,000	110,000
1887-1891	296,000	202,400
1892-1896	455,000	416,200

CLASSIFICATION OF SULPHURIC ACID.

A despatch has been received at the Foreign Office from Sir H. G. Macdonell, H.M. Minister at Lisbon, stating that, by a Ministerial Decree of June 15th last, it is provided that, as in the Imports Customs Tariff for the Province of Mozambique no mention is made of chemical products, sulphuric acid must be classified, for the payment of the duty leviable thereon, under Article 42 of the Mozambique Customs Tariff, of December 29th, 1892.

THE BOHEMIAN GLASS INDUSTRY.

The Chamber of Commerce at Reichenberg has made a step in advance in settling the difficult question of regulating the work undertaken at home in the various industries under its jurisdiction. The following interesting information with regard to the glass and china trade is taken from its report. The committee states that the most important section of this industry is what is called the "Gablonzer Industrie," which includes the manufacture of fancy goods, jewellery, and glass, glass ornaments of every kind, as in use among cultivated and uncultivated peoples alike all over the world, as well as necessities of life, such as buttons, ink-pots, and salt-cellars. The entire industry, except some of the raw glass trade, is supported on the shop system exclusively, the shop being, however, largely supplied from home-work. The districts of Gablonz and Tannwald are the peculiar centres of this industry, although a large number of the houses of the workmen thus occupied are situated in the neighbouring districts of Reichenberg, Turnau, Eisenbrod, Semil, and Hochstädt, while the polishing of ground glass occupies many families in Reichenberg and Turnau, and the manufacture of beads in the latter. It has, however, been found impossible to estimate the number of hands occupied in this species of work. A vague idea can, however, be gained by remembering that the population of the Gablonz district was in the year 1890 44,766, and that of Tannwald 26,435, that hardly any agricultural labour goes on in these densely-wooded mountain parishes, and that in the year 1891 the statistics of labour published for Northern Bohemia gave 1,585 as the number of workers in the Gablonz, a third being women, and in the Tannwald 4,959, of which one-half were women. These statistics dealt exclusively with persons employed in factories. The increase of population since 1890, an idea of which can be formed from the fact that between 1880 and 1890 the population of the Gablonz district increased 27 per cent., seems to be disregarded.

The second main centre of the glass industry in Northern Bohemia is the Haida district. Here the population is engaged in the manufacture of hollow-ware, varying from a cheap article, such as a vase fit for 5-kreuzer stall of a bazaar, to a full set of the most elaborate table-service. The number of home-workers in the glass industry of Haida and its neighbourhood is over 5,000, if somewhat inexact statistics founded upon data supplied by the socialistic organisation of the neighbourhood can be trusted. This particular trade is not confined to the Haida district, but extends over its frontiers to the districts of Böhmisch-Kamnitz, Zmickau, and Benzen. Even as far off as Warnsdorf we find glass refineries in connection with shops. The manufacture of mirrors, mirror-frames, and picture-frames is also very largely the employment of home-workers. But in the neighbouring district of Kammer, where there is so important a manufacture of porcelain, domestic labour is hardly used at all.

Reports of Companies.

THE HOLMES OIL CO., LTD.

The following is the annual report of this Company: It is proposed 1. That the issued capital of the company be reduced from 5,625 shares of £10. each, £9. paid, to 5,625 shares of £4. each, £3. paid. 2. That £15,000 Debenture stock be created, bearing interest at 6 per cent. per annum, redeemable at par in the option of the company at any time within 10 years, on six months' previous notice being given by post to the holders of the Debenture stock. Profit and loss—After providing for maintenance and repairs of works and mines, and interest on loans during the year at a cost of £2,262. 2s. 11d., there is a debit balance of £2,373. 19s. 3d., which, less the credit balance brought forward from last year of £93. 10s. 5d., leaves a balance at the debit of the profit and loss account amounting to £2,280. 8s. 10d. This sum falls to be carried forward to the current year's account. The directors regret that the result of the past year's working has proved so unsatisfactory. It is chiefly due to the lower prices obtained for sulphate of ammonia, the principal product of the company, but also in some measure to the fact that the yield of products, especially during the latter part of the past year, has been much affected by the nature of the shale worked—the want of development of the mines having compelled the directors to confine their attention to the inferior shale at their hands. They much regret that, before any improvement can be made in the present state of matters, it will be absolutely necessary, in their opinion, to develop the mines and make improvements in the works. In order to admit of this, the directors propose to submit to an extraordinary general meeting of the shareholders, to be held immediately after their annual meeting, the special resolutions detailed at the outset for their consideration and approval. With reference to these, it is proper that the directors should report that they, along with the committee of shareholders appointed at the annual general meeting of the company held on 23rd June, 1896, have very carefully considered what is best to be done in the interests of the shareholders in view of the depressed state of the oil trade, and the present condition of the works and mines they have been advised that, to carry on the works at a profit, they will require to develop the mines and make improvements on the works as above mentioned. As regards the mines, there is still a considerable quantity of shale to be obtained from them, but this can only be got and worked at a moderate cost by an expenditure of £2,000 which would be applied as follows:—viz., in sinking the present No. 1 mine, and in driving a new mine to take the place of No. 2 mine. Your directors therefore propose to expend a sum of £2,000. or thereby, in this way. Regarding the works, the directors are well aware that other companies are adopting an improved type of retort, by which it is claimed the cost of retorting shale is reduced 50 per cent., and they along with the members of the Committee of Shareholders, believe that, by erecting improved retorts, and making further improvements in the works, the business of the company can be carried on at a profit. The directors estimate that an expenditure of £10,000. will be necessary to give effect to their proposals under this head.

DIVIDENDS.

PRICE'S PATENT CANDLE COMPANY, (LIMITED).—The accounts for the half year ended June 30th show a profit of about £35,700. The directors recommend a dividend of 15s. per share, which will absorb £28,125.

MACHINERY TRUST (LIMITED).—The directors have decided to pay an interim dividend on the share capital of the trust, for the six months ended the 30th ult., at the rate of 20% per annum, the warrants in payment of same to be sent out on or after August 6th, 1897, to the shareholders standing on the registers on July 26th. The register of transfers is closed from the 24th to the 30th instant., both days inclusive.

CROSSED CHEQUES.—It is not generally realised that the words "and Co.," usually placed between the parallel lines crossing a cheque are not essential; that the parallel lines themselves without the words are quite sufficient. Not only is it a waste of time and ink and pen metal to add the words "and Co.," but they are absolutely in the way when the payee comes to fill in the name of the bank holding his account. The Bank of England and Co., or the London and County Bank and Co., is absurd. It would be helpful if instead of the silly use of the meaningless words the letters "N.N." became recognised as conveying the frequent instructions that the cheque was not negotiable. The parallel lines would have the meaning that they possess now, and the addition of the letters "N.N." instead of the words "and Co." would prevent the cheque being dishonestly cashed, enforcing its direct payment into the account of the payee in whose favour it is drawn. Why not abolish the useless "and Co.," and introduce the useful "N.N.?"—*Westminster Gazette*.

Parliamentary Jottings.

THE FATAL HAIRDRESSING ACCIDENT.

In the House of Commons, on Monday, Mr. Isaacson (Tower Hamlets, Stepney) asked the Secretary for the Home Department whether his attention had been called to the death by fire of a lady in a hairdresser's shop while having her hair dressed with a preparation known as pétrole, or dry shampoo; whether he was aware that this dangerous preparation was composed of rectified petroleum and ether, which gave off a vapour which would catch fire from a distant light or the action of the sun; and whether he would adopt means to put a stop to the sale of these dangerously inflammable preparations.

Sir M. W. Ridley (Lancashire, Blackpool).—Yes, sir, my attention has been called to this accident. I am informed that the inquest has been adjourned for further evidence as to the precise character of the preparation and other matters, and I am unwilling to anticipate the conclusions of the jury by expressing any opinion at present either as to the cause of the accident or as to the necessity which it may show to exist for taking further measures with regard to substances of this character. If, however, it is found, as seems likely, that the preparation was largely composed of petroleum spirit it falls, of course, within the provisions of the Petroleum Acts. I may add that the County Council, as the local authority under those Acts, are giving careful attention to the subject, and are represented at the inquest. The hon. member is no doubt well aware that the present law with regard to petroleum is in a very unsatisfactory state.—(The inquest is reported below.—*Ed. C. T. J.*)

THE PETROLEUM HAIR WASH FATALITY.

AN inquiry was opened at the Westminster Coroner's Court this week with reference to the death of Mrs. Fanny Isabel Samuelson, aged 30, wife of Mr. Francis Samuelson, of Breckenbrough Hall, Yorkshire, who died on Saturday, the 24th inst., at the residence of her father-in-law, Sir Bernhard Samuelson, at 56, Prince's-gate, from terrible injuries sustained through the explosion of a petroleum hair-wash. Mr. H. Jackson, barrister, appeared on behalf of the relatives of the deceased; and Mr. A. H. Forman represented Messrs. Emile and Co., hairdressers, of Conduit-street, W., at whose shop the explosion took place. Sir Bernhard Samuelson identified the deceased as his daughter-in-law, who died in great agony at his residence early on Saturday morning. Emile Kopf, partner in the firm of Emile and Co., said that on June 26, in the middle of the day, Mrs. Samuelson came to the shop to have her hair washed with a petroleum wash. Witness said it was not necessary, but on Mrs. Samuelson insisting he took her into the saloon and washed her hair with the wash. Suddenly a loud explosion occurred, and both Mrs. Samuelson and himself were set on fire. Witness, with the aid of some of the assistants in the shop, helped to put out the flames. Before he commenced to wash Mrs. Samuelson's hair he looked to see if any gas stoves in the saloon were alight, and found them all out. A large number of well-known hairdressers used this particular wash, although he personally had always considered it somewhat dangerous.—Emile Fush, the other partner in the firm, deposed to hearing the explosion and running into the saloon where Mrs. Samuelson was being attended. The fire was all over in a very short time.—The Coroner here showed witness a bottle, which the latter said contained the wash in question. A label on it bore the words, "This must not be used in rooms where there is a fire or light." Witness knew the wash was inflammable.—The Coroner: Do you know the nature of the preparation?—No, I buy it and retail it, sell it at 7s. 6d. a bottle. It was obtained from Mr. Masson, of Great Queen-street. He was certain that the stoves were all out when Mrs. Samuelson's hair was being washed. Very many customers asked for the wash, which was generally supplied by West-end hairdressers. It was a preparation which obtained a good deal of notice in Paris some years ago.—Mr. Jackson: Have you ever known accidents with this hair wash before?—Mrs. Reginald Fitzwilliam recently had an accident with it at Monte Carlo.—The Coroner stated that the inquiry was a most important one; and the counsel on either side and the jury desiring to have expert evidence in the case, the inquiry was adjourned.

FIRE AT A SOAP WORKS.—A fire broke out at the works of Messrs. G. W. Goodwin and Son, "Ivy soap" manufacturers, Ordsal-lane, Salford. Mr. Superintendent Bentley went out with the full strength of his brigade, taking with him two steamers, three tenders, and two escapes. The boiler-house was found alight, and the roof had fallen in. The object of the brigade was to prevent the flames reaching the main building, and in this Mr. Bentley was completely successful. After an hour's work the fire was extinguished. Some slight damage was done to the main building by the heat, but £200. or £300. will cover everything. The brigade from Messrs. Haworth's mill was prepared to render assistance, but there was no call for its services.

COMBINED VACUUM AND COMPRESSION PUMP.

WE illustrate herewith a pump, which will be found very useful to those investigating the nature of gases, etc. The pump has been designed for exhausting a vacuum to a fraction of a millimetre on one side of the piston, whilst pumping up to a pressure of 500lbs. per square inch on the other side. The diameter of the piston is $1\frac{3}{4}$ inches, and owing to the special method of construction it can be worked quite easily by hand power. The pump can be made for higher pressures if required. The following are a few special advantages of



this pump :—It is practically frictionless (like the Fleuss vacuum pump), consequently the wear of the piston, valves, etc. is almost *nil*. As the result, the pump can be run without renewals for a very much longer period than pumps which depend upon light-fitting pistons for their efficiency. The pump is quite definite in its action, whether it is exhausting or compressing. It has been specially designed so that it can be worked by hand for experimental and research work in laboratories, or for industrial purposes. The patentee of this pump is Mr. Fleuss, and the builders are The Pulsometer Engineering Co., Limited, Nine Elms Ironworks, London.

REPORT ON THE ARDEER EXPLOSION.

THE report of Colonel Ford, C. B., Inspector of Explosives, to the Home Secretary on the explosion which occurred at the factory of Nobel's Explosives Company at Ardeer, Ayrshire, on February 24, has been issued in the form of a Blue-book. The explosion, it will be remembered, took place early in the morning of February 24 in one of the final washing-houses of the factory, and resulted in the death of six of the employés of the company, including Mr. Fulton, the chemist in charge of the mill, Samuel Graham, a foreman, three hillmen, and a runner, all engaged at work at the time in the washing-house. The building in which the explosion took place was lightly constructed of wood, with felted roof and sanded floor, and was lighted partly by gas and partly by electricity, the lamps being outside the windows. At the time of the accident, nitro-glycerine was being drawn off from the tanks and placed in "brass-lined boxes" containing 15lbs. of nitro-cotton, 150 lbs. of nitro-glycerine being added to each box. These boxes are not only brass-lined, but they have brass fittings at the corners. They are further liable to have nitro-glycerine smeared upon them, and if, notwithstanding all the care exercised by the men in handling them, these boxes with brass fittings smeared with nitro-glycerine came into contact with a hard substance, such as iron or other metal, an explosion might be the result. It is in the use of these "brass-lined boxes" that Colonel Ford finds the most probable explanation of the accident, and if this view is correct he is disposed to think that the balance of the evidence is in favour of the explosion having originated outside the building, probably when the boxes were being placed upon the bogie. There is nothing to show definitely, however, as is generally the case where the building has entirely disappeared, and where everyone in it has been killed, how the explosion was brought about or where it

originated. Whatever may be the true explanation of the disaster it does not appear to the inspector that any blame can be attached either to Nobel's Explosives Company or to any of their workpeople in respect of it. Colonel Ford suggests, in conclusion, that, now that the risk from the use of the "metal-lined boxes" has been brought prominently to notice, they will be given up and lighter ones, not open to the same objection, substituted.

THE "VICTORIAN" STEAM JACKETED MILL.

THE demands of the chemical industry upon the resources of the engineer seem to increase every year, and in consequence several firms have made a specialty of chemical engineering. One of the results of this specialising is the "Victorian" mill which we illustrate. It has been designed for a client in order to cope with the treatment of certain products at an elevated temperature, and is made by the Archimedean Co., 9, Starley-road, Coventry.



As the illustration shows, it is a steam-jacketed pan-mill, suitable for grinding and mixing materials in the manufacture of furniture creams, polishing pastes, inks, pigments, colours, etc.

The rolls are of steel or chilled iron, and for special purposes these and the inside of the pan may be tinned. The steam jacket is under the floor of the pan, and may be used or discarded at will. The rolls run loose on the shaft, and the central part of the axle rests in a slotted portion of the axle box, which is covered with a cap fixed with four stud bolts. Space is allowed in the slot for the rolls to adjust themselves to any unevenness that may be caused in the feeding process. By removing the cap from the axle box the rolls may be lifted out for the purpose of emptying or cleansing the pan. Slight grooves may be turned on the face of the rolls to increase the grinding action. For a medium output the size of the pan would be about 2ft. 6in. in diameter and 6in. deep inside.

STORAGE OF CARBIDE OF CALCIUM.

AN AMENDMENT.

SINCE the Order in Council of the 26th February, 1897, in virtue of which certain parts of the Petroleum Acts, 1871 to 1881, were applied to carbide of calcium, the question of the expediency of exempting small quantities of this substance from the operation of the Order has occupied the attention of the Home Office, and the Secretary of State having been advised that such exemption might be safely extended to quantities of carbide of calcium not exceeding 5lbs., when kept in separate substantial hermetically closed metal vessels containing not more than 1lb. each, an Order in Council was made on the 7th July, 1897, authorising the keeping of not more than 5lbs. of carbide of calcium in vessels as above described without a licence, and the original Order of the 26th February has been amended accordingly. The amending Order appeared in the *London Gazette* of the 9th July, 1897. It is to be observed that where the carbide of calcium is not kept in vessels as above described no quantity may be kept without a licence.—Whitehall, 23rd July, 1897.

PATENT LAW REFORM.—A TEST CASE.—At the quarterly meeting of the Manchester Chamber of Commerce this week, reference was made to the subject of compulsory licences to work patents in the United Kingdom. On the invitation of the Board of Trade a test case had been prepared, and was now under consideration. The Chamber, which had had a hand in the preparation of the case, hoped to be able to prove whether or not the present law was effective, but as the matter was *sub-judice* they must suspend judgment. It also transpired that information was invited by the Local Government Board on the subject of secret commissions, and such information would be treated confidentially if so desired.

THE UNITED STATES TARIFF.

THE FINAL DINGLEY BILL.

FOR the sake of convenience in reference we give the following abstract of the new tariff bill which the U.S.A. Treasury Department has decided came into force at midnight on Friday, 23rd inst. This point had been in dispute owing to the fact that the Bill was not actually signed by the President until the next day. The abstract contains a few changes from the draft given in issue No. 525. The remarks in brackets refer to comparisons with the late Wilson Bill.

Acids: Acetate of pyroligneous acid, not exceeding the specific gravity of 1.47-1.000ths, $\frac{3}{4}$ c. per lb.; exceeding the specific gravity of 1.47-1.000ths, 2c. per lb. (against acetic acid 20 p.c. *ad val.*); boric acid, 5c. per lb. (against 3c.); chromic acid and lactic acid, 3c. per lb. (unchanged); citric acid, 7c. per lb. (against 25c. p.c. *ad val.*); salicylic acid, 10c. per lb.; sulphuric acid or oil of vitriol not specially provided for in this Act, $\frac{1}{4}$ c. per lb.; tannic acid or tannin, 50c. per lb. (against 60c.); gallic acid, 10c. per lb.; tartaric acid 7c. per lb. (against 20 p.c. *ad val.*). All other acids not specially provided for in this Act, 25 p.c. *ad val.*

Alumina, hydrate of, or refined bauxite, 6-10c. per lb. (against 4-10c. per lb.); alum, alum cake, patent alum, sulphate of alumina, and aluminous cake, and alum in crystals or ground, $\frac{1}{2}$ c. per lb. (against 4-10c. per lb.).

Ammonia, carbonate of, $1\frac{1}{2}$ c. per lb. (against 20% *ad val.*); muriate of, or sal ammoniac, $\frac{3}{4}$ c. per lb. (against 10% *ad val.*); sulphate of, 3-10c. per lb. (against 20% *ad val.*), practically the same.

Argols or crude tartar of wine lees crude, containing not more than 40% of bitartrate of potash, 1c. per lb.; containing more than 40% of bitartrate of potash, $1\frac{1}{2}$ c. per lb.; tartars and less crystals, or partly refined argols, containing not more than 90% of bitartrate of potash, and tartrate of soda or potassa, or Rochelle salts, 4c. per lb.; containing more than 90% of bitartrate of potash, 5c. per lb.; cream of tartar and patent tartar, 6c. per lb. (against argol, or crude tartar free).

Blacking of all kinds, 25% *ad val.* (against 20%).

Bleaching powder, or chloride of lime, 1-5c. per lb. (against free).

Blue vitriol or sulphate of copper $\frac{1}{2}$ c. per lb. (against free).

Bone char, suitable for use in decolourising sugars, 20% *ad val.* (against same).

Borax, 5c. per lb.; borates of lime or soda, or other borate material not otherwise provided for, containing more than 36% of anhydrous boric acid, 4c. per lb.; borates of lime or soda, or other borate material not otherwise provided for, containing not more than 36% of anhydrous boric acid, 3c. per lb. (against 2c. for borax, crude, or borate of soda, and $1\frac{1}{2}$ c. borate of lime).

Camphor, refined, 6c. per lb. (against 10 p.c. *ad val.*).

Chalk (not medicinal nor prepared for toilet purposes), when ground, precipitated naturally or artificially, or otherwise prepared, whether in the form of cubes, blocks, sticks, or discs, or otherwise, including tailors', billiard, red, or French chalk, 1c. per lb. Manufacturers of chalk not specially provided for in this Act, 25 p.c. *ad val.* (against 20 p.c. *ad val.*).

Chloroform, 20c. per lb. (against 25c.).

Coal-Tar Dyes and colours not specially provided for in this Act, 30% *ad val.*; all other products or preparations of coal-tar, not colours or dyes, and not medicinal, and not specially provided for in this act, 20% *ad val.* (against 25% for coal-tar dyes or colours).

Cobalt, Oxide of, 25c. per lb. (against same).

Collodion and all compounds of pyroxylin, whether known as celluloid or by any other name, 50c. per lb.; rolled or in sheets, unpolished, and not made up into articles, 60c. per lb.; if in finished or partly finished articles, of which collodion or any compound of pyroxylin is the component material of chief value, 65c. per lb. and 25% *ad val.* (against 45% *ad val.*).

Copperas or sulphate of iron, $\frac{1}{4}$ c. per lb. (against free).

Drugs, such as barks, beans, berries, balsams, buds, bulbs, bulbous roots, excrescences, fruits, flowers, dried insects, grains, gums and gum resin, herbs, leaves, lichens, mosses, nuts, *nutgalls*, roots, stems, spices, vegetables, seeds (aromatic, not garden seeds), seeds of morbid growth, weeds, and *resorts* used expressly for dyeing; any of the foregoing which are drugs and not edible, but which are advanced in value or condition by refining, grinding, or other process, and not specially provided for in this Act, $\frac{1}{4}$ c. per lb., and, in addition thereto, 10% *ad val.* (against 10% *ad val.*).

Ethers: Sulphuric, 40c. per lb., spirits of nitrous ether, 25c. per lb. (against ethers sulphuric 40c., spirits of nitrous ether 25c.). Provided, that no article of this paragraph shall pay a less rate of duty than 25% *ad val.*

Extracts and decoctions of logwood and other dyewoods, and extracts of barks, such as are commonly used for dyeing or tanning, not specially provided for in this Act, $\frac{1}{4}$ c. per lb. (against 10% *ad val.*); extracts of quebracho and of hemlock bark, $\frac{1}{2}$ c. per lb.; extracts of sumac, and of woods other than dyewoods, not specially provided for in this Act, $\frac{1}{4}$ c. per lb. (against 10% *ad val.*).

Gelatine, glue, isinglass, or fish glue, and prepared fish-bladders or fish-sounds, valued at not above 10c. per lb., $2\frac{1}{2}$ c. per lb. (against 25 p.c. *ad val.*); valued at above 10c. per lb. and not above 35c. per lb., 25 p.c. *ad val.*; valued above 35c. per lb., 15c. per lb., and 20 p.c. *ad val.*

Glycerine, crude, not purified, 1c. per lb. (against same); refined, 3c. per lb. (against same).

Indigo, extracts, or pastes of, $\frac{3}{4}$ c. per lb. (against free); carmined, 10c. per lb. (against free).

Ink and ink powders, 25 p.c. *ad val.* (against same).

Iodine, resublimed, 20c. per lb. (against free).

Iodoform, \$1 per lb. (against same).

Magnesia, carbonate of, medicinal, 3c. per lb.; calcined, medicinal, 7c. per lb.; sulphate of, or Epsom salts, 1-5c. per lb. (unchanged).

Potash: Bichromate, and chromate of, 3c. per lb. (against 25 p.c. *ad val.*).

Caustic, or hydrate of, refined in sticks or rolls, 1c. per lb.; chlorate of, $2\frac{1}{2}$ c. per lb. (against free).

Hydriodate, iodide, and iodate of, 2c. per 5lb. (against same).

Nitrate of, or saltpetre, refined, $\frac{1}{2}$ c. per lb. (against same).

Prussiate of, red, 8c. per lb. (against 25 v.c. *ad val.*); yellow, 4c. per lb. (against 25 p.c. *ad val.*); cyanide of potassium, $12\frac{1}{2}$ p.c. *ad val.*

Soda: Bicarbonate of soda, or super-carbonate of soda, or saleratus, and other alkalies, containing 50% or more of bicarbonate of soda, $\frac{1}{4}$ c. per lb. (against $\frac{1}{4}$ c.).

Bichromate and chromate of soda, 2c. per lb. (against 25% *ad val.*).

Crystal carbonate of soda, or concentrated soda crystals, or monohydrate, or sesquicarbonate of soda, 3-10c. per lb. (against 1-8c.).

Chlorate of soda, 2c. per lb. (against free).

Hydrate of, or caustic soda, $\frac{3}{4}$ c. per lb. (against $\frac{1}{2}$ c.); nitrate of soda, $2\frac{1}{2}$ c. per lb.; hypo-sulphite and sulphide of soda, 1c. per lb.

Sal soda, or soda crystals, not concentrated, 2-10c. per lb. (against 1-8c. soda crystals).

Soda ash, $\frac{3}{4}$ c. per lb. (against $\frac{1}{4}$ c.); arseniate of soda, $1\frac{1}{4}$ c. per lb.

Silicate of soda, or other alkaline silicate, $\frac{1}{2}$ c. per lb. (against $\frac{3}{4}$ c. per lb.).

Sulphate of soda, or salt cake, or nitre cake \$1.25 per ton (against free).

Sea moss, 10% *ad val.* (against same).

Sulphur, refined or sublimed, or flowers of \$8 per ton (against 20% *ad val.*).

Sumac, ground, 3-10c. per lb. (against 10% *ad val.*).

THE AMMONIUM SULPHATE SCHEME.

FORMATION OF THE ACTING COMMITTEE.

A MEETING of those who had expressed their willingness to fall in with the scheme for the revival of sulphate of ammonia, set forth in the *Journal* No. 518 p. 285, was held on Thursday this week at the Cannon-street Hotel, E.C., Mr. W. G. Blagden being in the chair. The proceedings were commenced at 11.30 a.m. promptly, there being a thoroughly representative attendance of about 30.

The Chairman briefly reviewed the position in regard to ammonium sulphate, and explained the steps that had been taken to advise the manufacturers of the object of the scheme. Proceeding he said, in consequence of the response that had been made to the circulars sent out, they had met together with a view to putting the scheme into working order. The chairman then read the names of those who had sent in their adhesion to the scheme, which included a number of influential makers, gas works and iron works, totalling in all about 150. Altogether these firms represented 130,000 tons out of an estimated annual production of 180,000 to 190,000 tons.

Their present object was to form a Committee with power to appoint officers, and to arrange for the judicious expenditure of the money raised by the levying of 6d. per ton on the respective makers. At this point Mr. Carr (Widnes) said that it would be interesting to know how many refusals, if any, had been given.

Colonel S. A. Sadler (mayor of Middlesbrough), the convener of the meeting, rose to explain that he had sent to all those classed for inspection under the Alkali, &c., Works Act. He had not received answers from all he had sent to, as he had found that many were either dealers or only indirectly interested in the trade, but out of the whole number he had only received five refusals. Mr. Carulla (Derby) thought the fact of there having been but five spoke for itself. At the same time, if it was a fair question, he would like to know the names of the firms who had refused.

The Chairman thought it was inopportune to do so, as they hoped to get some of these firms to join them later on, and so the matter was dropped.

Resuming, Colonel Sadler said, in addition to the support already received, there were several firms who were waiting to see the scheme

fairly launched, and as soon as this was done he anticipated that many of these firms, representing another 10,000 tons, would join them. The names which had been suggested for the constitution of the committee, and which had been chosen with a view to representing all interests, were then read to the meeting, and the following committee was appointed *nem con.*—

Messrs Fraser, Kennedy, Fyfe, Orr, Brotherton, Alderman Miles, Colonel Sadler, Messrs. H. Thomas, Craven, R. Dempster, Blagden, Leonard, Livesey, Carr, and a representative of Messrs Brunner, Mond and Co., Ltd., and the Bradford, Leicester, Huddersfield, Salford, and Nottingham Corporations

Colonel Sadler then proceeded to suggest that it was likely the whole of the sixpenny levy might not be required, and the committee would draw the levy up to that figure as wanted. While inviting those present to bring forward any ideas they might have, he would like to point out to the meeting that, taking the present prices of nitrate and sulphate, the nitrogen unit value of nitrate was 9s., and sulphate 7s., so that on the basis of the nitrogen units, which was the only way of comparing the two, sulphate ought to be worth £9. 10s. per ton as long as the actual price of nitrate remained what it was.

Mr. Orr spoke to the same effect.

Mr. Hanbury Thomas said he did not think they ought to attempt to restrict the levy. They had much work to do, and it should be done well. Taking advertising, for instance, it must be done thoroughly, or not at all.

Mr. R. Dempster said he quite agreed with the previous speaker. His original intention had been to raise £6,000. by a levy of 1s. at least. The present levy on the make meant about £3,700., and they would want it all, when they remembered that the Chilean Government were contemplating spending £26,000. in popularizing nitrate; £4,000. was very little against that. He also suggested the possibility of co-operation with the French producers and the German sulphate associations.

Mr. F. Livesey thought that it would be well to take the feeling of the meeting on the levy point.

Colonel Sadler then made a few remarks concerning the value of giving prizes for crops, and detailed what the Nitrate Committee were doing in his district.

Mr. Carulla said he supposed he was called on to speak because he was in much the same position as the sailor who could not swim, but was asked his opinion on the safety of the ship. He regretted the absence of iron works from the list of supporters, and thought they ought to be in evidence. He took exception to the idea of following slavishly the lines of the Nitrate Committee, who were attacking sulphate unfairly. It would not be a wise policy to do the same with nitrate. They might show its faults (and he here dwelt on the danger of fire attaching to its storage, etc.), but they should be careful to confine themselves in all statements to what was strictly tenable. It was also to be regretted that even those who called themselves friends of sulphate should spread the idea that it was not made sufficiently pure. As a point of fact it was now made in almost a state of chemical purity for a commercial article. Mr. Orr, replying to the question of the iron works, said, as far as Scotland was concerned, works representing a make of 6,800 had joined. He pointed out that their object was essentially an educational one and absolutely removed from anything like a Ring or similar things that were wholly pernicious in commercial life. They had elected an able Committee, and they wished that Committee to feel the subscribers were behind them with their hearty support. The levy of 6d. was most important. What they did must be done well. He also desired to suggest that the actions of the Nitrate Committee be more or less ignored. With such an influential Committee he thought they might devise more original methods of accomplishing their object. Mr. Carr pointed out that the levy was 6d. for all, and if some paid more than others they all shared in the benefits that accrued in exact proportion to the amount of the respective levies. The object of the old Association had been to concern itself more with the question of prices and statistics. Their present object was a different one. He referred to percentage increase in crops claimed for nitrate, and urged that the same be done for sulphate, which could show equal, if not better results. He thought many would-be supporters were hanging back because they had an idea that the committee just formed was a kind of Ring, and they would join in when this idea had been disabused. The chairman, in conclusion, said it seemed that the feeling of the meeting was that the Committee should spend the full sixpence. He feared they could not get in line with the French and German producers, but they might co-operate later on. The fact that the two German associations do aim at regulating the price, would stand in the way of immediate co-operation. It was arranged that in future Mr. Blagden should be the convener of the Committee. The meeting terminated with the usual votes of thanks.

A meeting of the newly-appointed committee was held immediately after the close of the meeting of the supporters.

Trade Notes.

SUGAR PRODUCTION.—Writing from Caracas, Venezuela, Mr. Andral, H. M. Consul, says that the exports of brown sugar are a little over the quantity last year. The prices have dropped considerably in consequence of slow sales for consumption. Planters are considering the establishment of sugar refineries. Sugar cannot be exported from here to any considerable extent, because the cost of production is too high, probably through want of systematic cultivation and economical working.

IRON AND COAL TRADES IN AMERICA.—It is reported from New York that the outlook of the iron and steel trades in America is at present very discouraging. There is reason to believe that an unexpectedly large number of mills and furnaces will close during this and next month, and, with similar movements among glass works and strikes of coal miners, there is the prospect of a period of idleness for some 400,000 workers.

POSITION OF TALLOW.—The tallow market has shown a steadier tendency in consequence of the Continental demand, and holders have been enabled to work off some of their old stocks owing to the shortage on the Continent, Russia amongst other countries being a buyer. Had it not been for the full supplies coming from the colonies the stocks would have been further reduced last month. On May 1st the total was 46,311 casks, while, despite the heavy deliveries—21,528 casks during the past two months—the total visible supply is still 39,224 casks.

CARBONITE OR BLACK POWDER.—During the past year the coal mines of Baron Burgh, in Saxony, used exclusively so-called coal-carbonite, of which about 5,000 lbs. were applied. The blasting was slightly more expensive than with common powder; the men did not like it so much; the performance was about as good. The Hänichen Company found the carbonite slightly cheaper, but are not any more favourable to this blasting agent in other respects. The miners complained about headaches, and the coal was too much split and torn. It is not improbable, however, that the inexperience of the men had something to do with this scant success. In some mines they certainly charged the holes too heavily; as a consequence we have the complaints about gases and the splitting of the coal.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols are the turn easier at 2s., both for 90's and 50/90's. There is not much business doing, either in carbolic acids or naphthas, prices remaining at 1s. 1 d. for 60% crude, and 7½d. for 40% crystals, and 1s. for liquid. Solvent naphtha is a little firmer at 1s. 7d. Anthracene is dull at 6d for 30% A, and 5d. for B. Pitch quiet at 18s. to 21s. f.o.b. East Coast.

Sulphate of ammonia keeps firm, with a moderate inquiry. Buyers in the forward position are still backward, and no premium on current values can be obtained for any but very advanced deliveries. Closing prompt values were:—Beckton, £7. 10s.; London, outside makes, £7. 10s.; Liverpool, £7. 12s. 6d.; Hull and Leith, £7. 10s.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade business has been fairly active in the chief products and prices all round are steady. Shipments of bleaching powder have been heavy during the past month, and there is still a good inquiry—prices being maintained at £6. 7s. 6d. f.o.r., and £6. 10s. to £6. 15s. f.o.b. Liverpool, £6. 5s. to £6. 10s. f.o.b. Tyne. Chlorates are quiet, and prices remain for potash and soda at 4d. and 4½d. per lb. respectively. Caustic soda is unchanged in value, but has rather an easier tendency, both for prompt and forward delivery. The market quotations, however, are sustained at former rates, viz., f.o.b. Liverpool, 77%, £8 15s.; 74%, £8.; 70%, £7. 2s. 6d.; 60%, £6. 2s. 6d. nett, per ton. In alkali, 58%, the position is unchanged, either for prompt or forward delivery, the quotation being £3. 17s. 6d. bags, f.o.r. Soda crystals and bicarbonate continue in steady demand. Sulphur, £4. 10s. to £4 12s. 6d. f.o.r. Sulphate of copper quiet at £16. f.o.b. Saltcake 19s. to 20s. in bulk f.o.r., 22s. 6d. to 23s. 6d. f.o.b. shipping ports. The demand is still good for potash, caustic, and carbonate, and prices are steady. Yellow prussiate of potash remains at 5½d. Cyanide firmer at 10d. to 10½d. Acetate of lime, brown, dull at £4. 15s. c.i.f. Acetate of soda, £12. 5s. c.i.f.

All other acetates quiet and with inclination to slightly lower prices. In ammonia salts there is very little movement or change in values. White powdered arsenic has settled down steady at £22. f.o.r. Lancashire, £22. 10s. London. Citrate of soda unaltered at 7s. 7½d. per cwt. Borax and boracic acid still offer at low rates. In chemical products of a miscellaneous kind there is a generally quiet state of trade reported from all the large centres of consumption.

REPORT ON MANURE MATERIAL.

There has been no new feature in the market upon which to comment, business being very quiet in every department. Quotations for mineral phosphates remain as last quoted, but selling is very difficult. In River Plate bones there are no new transactions to report, but the nearest value is probably £3. 12s. 6d. per ton, autumn shipment. Shippers of Bombay bone meal seem less disposed to go on at recent prices, the business being altogether remunerative. In the absence of actual business, nearest value is probably still about £3. 11s. 3d. per ton. Nitrate of soda is very quiet at 7s. 4½d. per cwt. ordinary quality, and 7s. 6d. for fine. In the forward position buyers hang back, and would only be tempted by prices on the level of spot values.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is firm, with forward sales doing and a moderate prompt demand. Olive keeps steady, prices being well maintained. Linseed is held for 16s. 6d. per cwt. Cottonseed is still quoted 15s. 9d. to 16s. 3d. per cwt. for Liverpool refined. Castor oil is very steady, with a fairly good inquiry, good seconds Calcutta being at 3½d. per lb.; first pressure French 3½d. per lb. Tallow, though steady in price, is very quiet. Resin firm and moving quietly. Spirits of turpentine firmer at 21s. per cwt. Petroleum unchanged.

CAKES.—West American linseed show an advance of 7s. 6d. on last quotations. Prices generally are firmer, with the exception of Egyptians, which are only in moderate demand at £3. 10s.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire—common £10., medium £12., best £15.; Derbyshire—common 40s., medium 50s., best 60s.; Welsh—best 90s., seconds 50s., and common 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead: £16. Red lead unchanged. Venetian red: £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide: £22. 10s. to £25.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron. Scotch warrants closed at 43s. 11½d.; Middlesbro', 39s. 3½d. cash; and hematite, 46s. 8d. Copper steady: Chili bars, G.O.B.'s and G.M.B.'s, closed at £47. 15s. to £48. cash, and £48. 2s. 6d. to £48. 7s. 6d. three months. Tin easy: Straits closed at £61. 5s. to £61. 15s. cash, and £61. 15s. to £62. 5s. three months; Australian, £62. 10s.; English ingots, £65. Lead firmer: Spanish, £12. 10s.; English, £12. 12s. 6d. Silesian spelter, ordinary, £17. 2s. 6d. Nickel, 1s. 2½d. Antimony, £29. 10s. to £30. Quicksilver: First hands, £7. 5s.; second hands, £7. 2s. 6d. Copper shares steady: Cape, 2¼ to 2½; Copiapo, 2½ to 2¾; Libiola, 2½ to 2¾; Mason and Barry, 2¾ to 3; Rio Tinto, 22½ to 22¾; Tharsis, 5½ to 5¾.

GLASGOW, WEDNESDAY.—Market idle. Scotch done at 44s. cash, and 44s. 1½d. one month; buyers, 43s. 11½d. cash; sellers, 44s. Cleveland done at 39s. 3½d. cash; buyers, 39s. 3½d. cash; sellers, 39s. 4d. Cumberland hematite, buyers, 46s. 8d. cash; sellers, 46s. 9d. Middlesbrough hematite, buyers, 47s. 9d. cash; sellers, 48s.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—It is regrettable to notice that although the seed crushing trade here has extended of late years there has been a lamentable falling off in the exports of oil, which this year only reach 20,000 tons, with a value of £341,000. There have also been imports of seed oils of almost 6,000 tons; to the Humber ports the imports of olive oil have reached about 10,000 tons. There have been some rapid changes in the value of seed oils since last report, cottonseed and linseed oils maintaining their firmer positions. Linseed oil: Spot is quoted firm 14s. 6d. buyers; forward last four months, 15s. buyers; boiled and refined from £1. to £1. 10s. per ton extra. Refined cotton oil quiet but firm: Spot, naked, 13s. 10½d.; forward November-April, 14s. Crude is quoted

12s. 6d.; November-April buyers at the same price. Filtered refined oil is about £1. per ton extra upon price of refined. Casks £1., and ordinary barrels £1. 10s. per ton extra. Castor and olive oil are but little changed. Cod oils, £16. to £18. per ton. Spirits of turpentine, 21s. 3d. to 21s. 6d. Italian olive soaps in fair demand, at £15. to £18. per ton, c.i.f. Hull. Oleines, £15. 10s. to £18. per ton for re-distilled. Soft soap, 12s. 6d. per cwt.

CAKES.—Linseed Cakes: Demand small, but prices very firm, 95% pure, £6. 7s. 6d. Oilcakes, £5. 7s. 6d. to £5 10s. Americans, £5. 12s. 6d. Russians, £6. 2s. 6d. per ton. Cotton cakes remain in slow demand, but prices are firmer: best makes, £3. 15s.; seconds, £3. 12s. 6d. Rape cakes unaltered.

PAINTS.—The import of coal tar dyes to the Humber ports for 12 months have reached a total value of £330,000.; of painters' colours, £172,000.; whilst the exports of chemicals, including alkali, have only reached about £280,000. Business here continues good, and prices are unchanged.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Few of the works of the district resumed production, after the holidays, earlier than the beginning of the week, when the bulk restarted. One here and there is found still closed. Business reopens on the whole in a slightly improved spirit, and the bulk of stuff passing this week promises to be considerable. Lead products are still inclined to the advance, and caustic soda is on report as somewhat drained of stocks, although prices of the various strengths remain unchanged. Sulphate of copper continues on the down grade, being quoted still lower; the other ordinary chemicals show little change. Sulphate of ammonia has kept steadily at about the point of £7. 10s. spot Leith, and this unwonted absence of fluctuation is taken by some to indicate that the article has found bottom, and may now do better. Mineral oil makers are approaching their annual conference for deciding on the price of burning oil for the new season. The Holmes Oil Company issued its report last week, showing a disastrous year's working, with heavy loss for a small works. (See p. 69.)

Chief prices current are:—Soda crystals, £2. 12s. 6d., nett, Tyne, soda ash, 48/62°, £4. 2s. 6d. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £5. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8., 70/72° £7. 2s. 6d., 60/62° £6. 2s. 6d., and cream 60/62° £6., all nett, Liverpool; bleaching powder, 35/37°, £6. 10s. nett, Tyne; saltcake, 19s. to 20s.; borax, English, refined, £14. 15s. and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3¼d. nett, f.o.b. Glasgow); chlorate of potash, 3¼d. to 4d. less 5%, any port; nitrate of soda, 7s. 6d. to 7s. 9d.; sulphate of ammonia, £7. 10s., prompt, f.o.b. Leith; sal ammoniac, first and second white, £33. and £31. nett any port; sulphate of copper £15. 15s., less 5% Liverpool; paraffin scale, hard, 1¼d. to 1½d., and soft, 1½d. per lb.; paraffin wax, 120° semi-refined, 1¼d. to 2d. per lb.; paraffin spirit (naphtha), 6¼d. per gallon; paraffin oil (burning), No. 1, 6¼d., and crystal, 6¼d., at Glasgow and other big centres, for Scotch buyers (English sales ½d. to ¾d. lower); ditto (lubricating) 865° £5. to £5. 5s., 885° £5. 15s. to £6. 5s., and 890/895° £6. 10s. to £7. Week's imports of sugar at Greenock were 11,808 bags beet unrefined.

TYNE CHEMICAL REPORT.

TUESDAY.

The chemical market is quiet, and shows but little demand, excepting sulphur, which is quoted at £4. 15s. to £5. per ton, and may advance still further.

Bleaching powder, softs, £6. 10s. per ton, nett; hards, £6. 15s. per ton, nett; caustic soda, 76/77°, £9. per ton, nett; do., 70°, £7. 10s. per ton, nett; recovered sulphur, 2 cwt. bags, £4. 15s. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. 6d. per ton, nett; do., 52%, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett weight; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett weight; blanc fixe, £7. 5s. per ton, nett weight; chloride of barium, refined crystals, £6. 15s. per ton, nett weight; do., 90/95% crude calcined, £6. per ton nett weight; sulphide of barium,

HULL.*Week ending July 17th.*

Acids—	
Hamburg,	1 carboy Sissons Bros. & Co.
Bari,"	1 ck. Wilson, Sons, & Co., Ltd.
Barytes—	
Bremen,	107 cks. Bailey & Leatham, Ltd.
Antwerp,	212 105 bgs. Wilson, Sons, & Co., Ltd.
Hamburg,	20 cks. W. & C. L. Ringrose
Amsterdam,	23 W. & C. L. Ringrose
Ghent,	33 Hutchinson & Son
Antwerp,	7 Wilson, Sons, & Co., Ltd.
Rotterdam,	20 "
Camphor—	
Hamburg,	5 cs. Wilson, Sons, & Co., Ltd.
Castor Oil—	
Trieste,	12 cs. Wilson, Sons, & Co., Ltd.
Caustic Soda—	
Antwerp,	1 brl. Wilson, Sons, & Co., Ltd.
Chemicals (otherwise undescribed)	
New York,	6 pks. Wilson, Sons, & Co., Ltd.
Dunkirk,	145 dms. Wilson, Sons, & Co., Ltd.
Hamburg,	11 cks. "
Cod Oil—	
Drontheim,	5 brls. Wilson, Sons, & Co., Ltd.
Alesund	41 "
Christiania,	25 "
Colours—	
Hamburg,	6 cs. G. Malcolm & Son
Antwerp,	1 Wilson, Sons, & Co., Ltd.
Stettin,	13 pks. Wilson, Sons, & Co., Ltd.
Ghent,	20 cks. Hutchinson & Son
Rotterdam,	5 brls. W. & C. L. Ringrose
Rotterdam,	6 cks. W. & C. L. Ringrose
Rotterdam,	31 brls. 214 pks.
Creosote Salts—	
Rotterdam,	4 cks. W. & C. L. Ringrose
Cryolite—	
Copenhagen,	3 cks. Wilson, Sons, & Co., Ltd.
Dyestuffs—	
Alizarine	
Rotterdam,	13 brls. W. & C. L. Ringrose
Argols	
Bordeaux,	59 cks. Wilson, Sons, & Co., Ltd.
Madder	
Rotterdam,	1 ck. Hutchinson & Son
Shumac	
Palermo,	434 bgs. Wilson, Sons, & Co., Ltd.
"	675 "
Trieste,	50 Wilson, Sons, & Co., Ltd.
Tanners' Bark	
Ghent,	123 bgs. Hutchinson & Son
Farina—	
Harlingen,	230 bgs. W. & C. L. Ringrose
Danzig,	186 Wilson, Sons, & Co., Ltd.
Stettin,	125 "
Ghent,	10 "
Ghent,	21 bls. Hutchinson & Son
Glucose—	
New York,	250 bgs. Wilson, Sons, & Co., Ltd.
Stettin,	200 "
Rotterdam,	50 Hutchinson & Son
Glue—	
Rouen,	6 cks. Rawson & Robinson
Dunkirk,	3 Wilson, Sons, & Co., Ltd.
Lead Acetate—	
Hamburg,	19 cks. Bailey & Leatham, Ltd.
Stettin,	6 Wilson, Sons, & Co., Ltd.
Ochre—	
Rouen,	29 cks. H. J. Oldroyd

Paint—	
Rotterdam,	2 dms. Hutchinson & Son
Phosphate—	
Ghent,	80 t.
Phosphorus—	
Rotterdam,	1 cs. T. F. Bell & Co.
Potash—	
Antwerp,	45 dms. Wilson, Sons, & Co., Ltd.
Pumice Stone—	
Messina,	259 pks. Wilson, Sons, & Co., Ltd.
"	30 cs.
Pyrites—	
Huelva,	2,012 t. Barton Farmers Co.
Salt—	
Hamburg,	30 bgs. Lofthouse & Saltmer
Saltpetre—	
Hamburg,	20 bgs. Wilson, Sons, & Co., Ltd.
Soap—	
Bari,	92 cs.
Soda—	
Antwerp,	12 cks. Wilson, Sons, & Co., Ltd.
Antwerp,	10 brls. 120 bgs. Wilson, Sons, & Co., Ltd.
Starch—	
New York,	5 brls. Wilson, Sons, & Co., Ltd.
Bremen,	3,197 cs. Veltmann & Co.
Rotterdam,	16 W. & C. L. Ringrose
Ghent,	305 pks. Wilson, Sons, & Co., Ltd.
Amsterdam,	60 cs. Hutchinson & Son
Antwerp,	116 Bailey & Leatham, Ltd.
"	40 O. S. Stephenson & Co.
Ghent,	36 Hutchinson & Son
Stearine—	
Antwerp,	71 bgs. Wilson, Sons, & Co., Ltd.
Sulphur—	
Catania,	1,303 pks. Wilson, Sons, & Co., Ltd.
"	75 bgs.
Sulphurous Acid—	
Rotterdam,	5 cs. Hutchinson & Son
Tallow—	
St. Petersburg,	24 cks. Wilson, Sons, & Co., Ltd.
Dunkirk,	52 "
Tar—	
Danzig,	3 brls.
Tartar—	
Bordeaux,	7 cks. Rawson & Robinson
Tartaric Acid—	
Rotterdam,	4 cks. Hutchinson & Son
Treacle—	
New York,	550 brls. Wilson, Sons, & Co., Ltd.
White Lead—	
Rotterdam,	10 cks. W. & C. L. Ringrose
Amsterdam,	46 Hutchinson & Son
Antwerp,	31 Bailey & Leatham, Ltd.
Wood Pulp—	
Rotterdam,	20 pks. Hutchinson & Son
Stockholm,	5 H. Biggs, Sons, & Co.
Hamburg,	127 bls. Bailey & Leatham, Ltd.
Zinc Oxide—	
Antwerp,	5 cks. Bailey & Leatham, Ltd.
Zinc White—	
Rotterdam,	45 cks. Hutchinson & Son
Antwerp,	16 Wilson, Sons, & Co., Ltd.

GLASGOW.*Week ending July 22nd.*

Arachide Oil—	
Rotterdam,	4 cks. J. Rankine & Son
Bone Meal—	
Iceland,	303 bgs. Roberts & Beroise,

Castor Oil—	
Marseilles,	42 cks.
Chemicals—	
Hamburg,	1 cs.
Chrome Alum—	
Rotterdam,	6 brls. J. Rankine & Son
Colours—	
Antwerp,	5 cs.
Rotterdam,	114 pks. J. Rankine & Son
"	5 cks. 1
Dyestuffs—	
Alizarine	
Rotterdam,	74 brls. J. Rankine & Son
Aniline	
Rotterdam,	52 cks. 12 cs. J. Rankine & Son
Aniline Salts	
Rotterdam,	10 cks. 5 bxs. J. Rankine & Son
Cutch	
Rangoon,	250 bxs.
Farina—	
Hamburg,	5 bgs.
Glucose—	
New York,	100 brls.
Guano—	
Sorveer,	250 sks.
Lead Acetate—	
Hamburg,	20 cks.
Oxalic Acid—	
Rotterdam,	6 cks. J. Rankine & Son
Paraffin Scale—	
Rangoon,	82 bxs. 470 bgs.
Phosphate Rock—	
Bona,	500 t.
Potash—	
Hamburg,	60 dms. 19 cks.
Rotterdam,	40
Rosin—	
Savannah,	1,000 brls.
New York,	200
Salicylic Acid—	
Hamburg,	3 cs.
Starch—	
Montreal,	25 bxs.
Antwerp,	40 cs.
New York,	900 2,350 sks.
Rotterdam,	40
Stearine—	
Rotterdam,	35 cks.
Amsterdam,	63 bgs.
Tallow—	
Boston,	30 brls.
Tartaric Acid—	
Marseilles,	2 cks.
Turpentine—	
Savannah,	1,500 brls.
Ultramarine—	
Rotterdam,	5 cs.
Varnish—	
Antwerp,	4 cks.
Waste Salt—	
Hamburg,	355 t. 124 cks.
White Lead—	
Rotterdam,	94 cks. J. Rankine & Son
Wood Pulp—	
Montreal,	1,072 bundles
Gothenburg,	37 bls.
Frederickshald,	657 t. Clyde Paper Mills Co.
Christianasand,	3,151 bls.
Christiania,	1,912
Drontheim,	1,190
Zinc White—	
Rotterdam,	120 cks. J. Rankine & Son
"	90

TYNE.*Week ending July 17th.*

Alum Earth—	
Hamburg,	29 cks. Tyne S. S. Co.
Barium Chloride—	
Rotterdam,	350 bgs. Tyne S. S. Co.
Barytes—	
Rotterdam,	350 bgs. Tyne S. S. Co.
Antwerp,	22 cks. S. S. Co.
Antwerp,	300 bgs. "

Cod Oil—	
Bergen,	8 brls.
Colours—	
Antwerp,	2 cks. Tyne S.
Glue—	
Antwerp,	2 cks. Tyne S. S. Co.
Hamburg,	5 "
Minium—	
Rotterdam,	16 cks. Tyne S. S. Co.
Paint—	
Christiania,	6 cs.
Phosphate—	
Antwerp,	80 bgs. Tyne S. S. Co.
Plumbago—	
Hamburg,	10 cks. Tyne S. S. Co.
Quicksilver—	
Copenhagen,	100 cyldrs.
Soap—	
Rotterdam,	2 cs. Tyne S. S. Co.
Starch—	
Rotterdam,	214 cs. Tyne S. S. Co.
Tartaric Acid—	
Rotterdam,	7 cks. Tyne S. S. Co.
Varnish—	
Antwerp,	5 kgs. Tyne S. S. Co.
White Lead—	
Rotterdam,	1 ck. Tyne S. S. Co.
Wood Pulp—	
Christiania,	498 bls.
Herre,	420
Gothenburg,	122 pks.
Rotterdam,	104 bls. Tyne S. S. Co.

GOOLE.*Week ending July 14th.*

Alizarine—	
Rotterdam,	12 brls.
Alkali—	
Calais,	5 cks.
Alum—	
Rotterdam,	22 bgs.
Barytes—	
Rotterdam,	11 cks.
Antwerp,	40 bgs.
Caoutchouc—	
Boulogne,	3 cs.
Colours—	
Hamburg,	3 cs.
Dyestuffs (otherwise undescribed)	
Rotterdam,	297 cks. 66 cs.
Boulogne,	7 9 82 pks.
Glucose—	
Hamburg,	96 cks.
Calais,	100 bgs.
Madder—	
Rotterdam,	2 cks.
Phosphate—	
Ghent,	2,000 bgs.
Potash—	
Calais,	23 dms.
Pyrites—	
Bossmo,	1,000 t.
Saltpetre—	
Rotterdam,	200 bgs.
Hamburg,	25 cks.
Starch—	
Rotterdam,	11 cs.
Varnish—	
Hamburg,	1 ck.
Waste Salt—	
Hamburg,	180 t.
Wood Pulp—	
Rotterdam,	54 brls.

GRIMSBY.*Week ending July 17th.*

Caoutchouc—	
Rotterdam,	10 cs.
Chemicals (otherwise undescribed)	
Hamburg,	2 cks.
Colours—	
Hamburg,	8 cks. 12 cs. 15 pks.
Antwerp,	15 7
Rotterdam,	102 bgs.
Dyestuffs (otherwise undescribed)	
Dieppe,	25 cks.
Indigo—	
Rotterdam,	23 chts.
Plumbago—	
Hamburg,	1 ck.
Soap—	
Rotterdam,	40 pks.

EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.*Week ending July 21st.*

Alkali—		
E. London,	10 c.	£7
Hamburg,	2 t. 16	14
Napier,	2	57
Montreal,	11	15
Alum—		
Calcutta,	38 t. 15 c.	£95
Ammonia—		
Calcutta,	10 cs.	£10
Ammonium Carbonate—		
Cologne,	1 t. 9 c.	£35
Paris,	2	60
Rangoon,	15 cs.	35
Ammonium Chloride—		
Bussorah,	20 brls.	£60
Trebrizonde,	1 t. 15 c.	54
Sydney,	2	38
Alexandretta,	1	31
Ammonium Sulphate—		
Colombo,	3 t. 2 c.	£29
Amsterdam,	129 5	1,018
Mauritius,	125	995
Araenic—		
Melbourne,	10 t.	£245
Cape Town,	10 kgs.	11
Napier,	100 dms.	124
Barium Nitrate—		
New York,	2 t.	£36
Bisulphite of Lime—		
Madras,	6 hds.	£25
Bleaching Powder—		
Mauritius,	9 c.	£5
Auckland,	16	16
Boracic Acid—		
New York,	3 t.	£105
Borax—		
Hamburg,	1 ck. £13	
Melbourne,	2 t.	30
Sydney,	5 40 kgs.	110
Alexandria,	2	11
Braila,	10	13
Rotterdam,	2 13 c.	95
Carbolic Acid—		
Auckland,	5 cks.	£21
Montreal,	5 dms.	18
Calcutta,	4	33
Hamburg,	4	7
Brisbane,	30	12
Sydney,	5	12
Carbonic Acid Gas—		
Jersey,	75 tubs	£29
Caustic Soda—		
Durban,	5 t.	£6
Canterbury,	14 c.	18
Pt. Elizabeth,	2 17	21
Normanton,	25 7	166
Bahia,	10 18	73
Auckland,	5 18	61
Sydney,	10 1	133
Seychelles,	1	10
E. London,	5	6
Wellington,	1	7
Chemicals (otherwise undescribed)		
Antwerp,	1 ck.	£15
Cologne,	16	30
Rosa io,	5 cs.	19
Yokohama,	10	61
Bundaberg,	89	250
Durban,	5	145
Toronto,	18 pks.	49
Madras,	6	48
Bombay,	6	59
St. John, N.B.,	6	15
Singapore,	4	66
Rotterdam,	13	113
Brussels,	11 kgs. 5	188
Dunkirk,	68	800
Perth,	25	24
Adelaide,	1	10
Sebastopol,	20 dms.	60
Hamburg,	40 35	746
Madeira,	9 pks.	16
Hobart,	4	23
Christiana,	5	55
Sydney,	3 cs. 46 10	318
Melbourne,	1	266
Townsville,	1	875
Montreal,	1	21
Calcutta,	19	70
Citric Acid—		
Antwerp,	1 ck.	£30
Sydney,	10 c.	59
Canterbury,	1 kg.	6

Riga,	2	13
Fremantle,	1	7
Rotterdam,	1 t.	114
Brisbane,	2	13
Hamburg,	2	16
Coal Products—		
Alizarine		
Boston,	25 cks.	£311
Aniline		
Dunedin,	1 cs.	£23
Melbourne,	1	10
Calcutta,	1	13
Aniline Dyes		
Auckland,	1 cs.	£10
Aniline Oil		
Genoa,	15 dms.	£550
Anthracene		
Cologne,	109 cks.	£1,100
Creosote		
New York,	330 cks.	£157
St. Malo,	22,916 gallons	119
Naphtha		
Wellington,	30 dms.	£23
Naphthaline		
Calcutta,	10 cks.	£11
Bremen,	7	7
Antwerp,	12	100
Pitch		
Adelaide,	3 brls.	£6
Rockhampton,	5 pks.	8
Batoum,	1,700	287
Rangoon,	12 cks.	8
Boston,	500	230
Calcutta,	15	11
Montreal,	360	90
Riga,	300	150
Amsterdam,	270	800
Antwerp,	1,030 t.	1,226
Durban,	40 dms.	9
New York,	292 7,059 bgs.	391
Mauritius,	10	9
Pyridine		
Cologne,	12 brls.	£125
Tar		
Malta,	12 brls.	£13
B. Ayres,	12	20
Durban,	210 dms.	18
Calcutta,	30 runlets	23
Mauritius,	10	6
Coal Products (otherwise undes.)		
Singapore,	45 dms.	£42
Durban,	10 runlets	6
Copper Sulphate		
Paris,	10 t.	155
Trepart,	5 2 c.	80
Vigo,	1 18	37
Braila,	6	114
Cream of Tartar		
Brisbane,	1 t. 5 c.	£104
Wellington,	10	42
Adelaide,	3	11
Launceston,	2 10	198
Durban,	10	41
Hio,	10	43
Disinfectants—		
Pt. Elizabeth,	51 pks.	£13
Canterbury,	14	12
Otago,	1 cs.	22
Wellington,	1	16
Calcutta,	500 dms.	93
Melbourne,	2	5
Cape Town,	325	132
Hamburg,	50 cks.	250
Durban,	32	30
Singapore,	28 pks.	46
Montreal,	13	43
Oporto,	4	23
Bombay,	35 4	27
Sydney,	20 dms.	26
Manure—		
Gothenburg,	29 t. 11 c.	£65
Dunkirk,	5	30
Demerara,	50	450
Oxalic Acid—		
Riga,	1 ck.	£12
Phosphate—		
Trepart,	24 t. 13 c.	£170
Potash—		
Wellington,	1 t. 8 c.	£52
Paris,	2 cs.	40
Hio,	5	12
Potash Salts—		
Durban,	13 t. 7 c.	£800
Potassium Chlorate—		
Sydney,	2 t.	£68
Potassium Cyanide—		
Auckland,	4 t.	£387
Pt. Elizabeth,	12	924

Melbourne,	97 cs.	818
Delagoa Bay,	1 3 c.	86
Salicylic Acid—		
Sydney,	5 t.	£33
Saltpetre—		
Melbourne,	10 c.	£11
New York,	14	18
Lyttelton,	10	11
Newport News,	5	10
Oporto,	1 t. 2	21
E. London,	15	16
Sheep Dip—		
Cape Town,	300 dms.	£50
E. London,	100	22
Soda—		
Durban,	8 t. 14 c.	£43
Stettin,	1	8
Soda Crystals—		
Delagoa Bay,	1 t. 13 c.	£5
Cape Town,	1 5	5
Sodium B carbonate—		
Bombay,	6 c.	£13
Perth,	2 t.	10
Auckland,	2 3	13
Cape Town,	8	5
Launceston,	1	7
Sodium Carbonate—		
Yenesi River,	2 t. 15 c.	£25
Sodium Nitrate—		
Hio,	20 t. 4 c.	£157
Sodium Sulphate—		
Ghent,	50 t.	£58
Sulphur—		
Mossel Bay,	8 t. 19 c.	£97
Shanghai,	1	7
Tartaric Acid—		
Melbourne,	1 t.	£120
Sydney,	10 kgs. 11 c.	118
Canterbury,	5	29
Brisbane,	5	30
Cape Town,	2 cs. 5	41
Durban,	3	18
Rockhampton,	2	13
Dunedin,	5	30

LIVERPOOL.*Week ending July 21st.*

Alum—		
Barl,	1 t. 5 c. 2 q.	£6
Rio,	1 1	6
Varna,	6 17 2	32
Smyrna,	6 14 1	35
Montreal,	10 1 3	49
Casablanca,	1 5 1	6
Bombay,	4 1 2	26
Piræus,	2 14	13
Alexandretta,	2 15	13
Bahia,	1	5
Aluminoferrie—		
Montreal,	5 t. 14 c.	£15
Ammonia—		
Havana,	5 c.	£8
Ammon'a (Liquid)—		
Valparaiso,	5 c. 2 q.	£15
Ammonium Carbonate—		
Hamburg,	1 t. 6 c. 3 q.	£41
Pernambuco,	10	16
Ammonium Chloride—		
Beyrout,	1 t. 2 c.	£31
Rotterdam,	1	28
Montreal,	6	5
Barcelona,	1 8	27
Santos,	1 12	20
Salonica,	1	31
Yokohama,	1 5	38
Hio,	2 10	45
Genoa,	3 11 108 bgs.	213
Odessa,	4	132
Philadelphia,	8 6	244
Gijon,	2 10 2 q.	16
Smyrna,	2 6 2	91
Fiume,	1 ck.	5
Ammonium Sulphate—		
Port Royal,	150 t. 15 c.	£1,150
Genoa,	20	155
Rio,	1 1 3 q.	5
Samarang,	63 2 3	468
Gd Canary,	5	39
Honolulu,	40 13 1	310
Las Palmas,	25 5	200
Sourabaya,	502 19	3,886
Arsenic—		
Seville,	6 c.	£10
Bleaching Powder—		
Ancona,	10 cks.	

Baltimore,	121	15 kgs.
Bari,		
Bilbao,	30	40 cs.
Bombay,	614	10 bxs.
Boston,		
B. Ayres,		
Calcutta,		
Cape Town,		40 dms.
Dunkirk,	18	
Genoa,	226	
Lisbon,		40 brls.
Montreal,	47	
Naples,	71	
Newport News,	405	
New York,	348	
Rio de Janeiro,		28
Rouen,	55	
San Francisco,		50
San Sebastian,	88	
Venice,	18	
Boracic Acid—		
Rotterdam,	6 c. 3 q.	£7
B. Ayres,	19 3	26
Havre,	11	15
Montreal,	6	8
Borax—		
Genoa,	19 c. 2 q.	£16
Natal,	1 t. 1 3	16
Vera Cruz,	13 1	11
Ibrail,	13	12
Montreal,	21 3 3	355
B. Ayres, 5 brls.		19
Antwerp,	7 12	142
Stockholm,	1 2 1	30
Copenhagen,	1 10	18
Rotterdam,	1 1	18
Venice,	12	10
Calcium Chloride—		
Hamburg,	5 t. 2 c.	£11
Sydney,	10 3	23
Rouen,	10 11 2 q.	26
Genoa,	2 1	5
Odessa,	9 19	20
Carbolic Acid—		
Hamburg,	13 t. 14 c.	£960
Odessa,	6 2 q.	30
Genoa,	3 3	14
Trieste,	10	31
Rosario,	4 3	24
Hawkes Bay,		
N Z,	1 12 2	44
Leghorn,	13	54
New York, 12 cks.		96
Sherbro, 5 dms.		8
Malta,	9	13
Caustic Potash—		
Sydney,	8 c. 3 q.	£12
Caustic Soda—		
Acajutla,	60 dms.	
Alexandria,	69	
Amsterdam,	90	
Bahia,	180	
Baltimore,	60	
Barcelona,	230 50 cks.	
Bari,	162	
Bilbao,	24 10	54 brls.
Boston,	700	
Brisbane,	37	
Calcutta,	40	
Cartagena,	31	
Catania,	42	
Colon,	12	
Gefse,	14	26
Genoa,	269	
Hamburg,	99	
Havana,	100	
Ibora,	590	
Ibrail,	108	
Iaffa,	150	
Kingston,	10	
Libra,	36	
Lisbon,	46	
Malaga,	30 6	
Maranham,		
Melbourne,	5	
Messina,	30	
Mollendo,	70	
M. Video,	25	
Montreal,	185	
Naples,	31	
N. Orleans,	60	
New York,	67 575 pks.	
Odessa,	421	
Oporto,	30	
Philadelphia,	30	
Piræus,	17	
Rangoon,	41	
Rio de Janeiro,	38	
San Francisco,	140	
San Sebastian,	65	

Seville, 270	Taltal, 6 pks.	Soap—	Melbourne, 580
Santos, 20	Tripoli, 15	Addab, 50 bxs.	M. Video, 45
Smyrna, 25	Valparaiso, 140 160	Amsterdam, 50	Montreal, 50
Sydney, 135	Painters' Colours—	Barbadoes, 1,330	New York, 1 ck.
Tarragona, 56	Akassa, 13 kgs.	Bombay, 24 cs.	Pt. Natal, 60
Valencia, 250	Alexandria, 20 brls.	B. Ayres, 25	Rangoon, 20
Yokohama, 100	Bahia, 1 ck.	Burutu, 72 tins	Rosario, 28 kgs.
Chemicals (otherwise undes.)—	Baltimore, 80	Calcutta, 6	Rouen, 543 bgs.
Odessa, 2 t. 10 c. £62	Barbadoes, 2	Cape Town, 1,600	Seville, 90 pks.
Marseilles, 8	Bilbao, 22	Chama, 25	Smyrna, 110 kgs.
Leghorn, 1	Bombay, 30 cs. 947	Christiania, 150	Valparaiso, 37 pks.
Calcutta, 26 11 2 q. 79	Constantinople, 140 16	Constantinople, 201	Yokohama, 250 kgs.
Christiania, 11	Coquimbo, 26	Copenhagen, 45	Sodium Carbonate—
Sydney, 1	Gijon, 2 cs.	Curacao, 100	Baltimore, 56 brls.
Hamburg, 13	Hong Kong, 22 pks.	Delagoa Bay, 75	Sodium Chlorate—
China Clay—	Manaos, 6 20	Drewin, 125	Boston, 125 kgs.
Boston, 1,830 cks.	Paraffin Wax—	E. London, 1,088	New York, 110
Montreal, 570	Barcelona, 21 bgs.	Genoa, 100	St. Petersburg, 150
New York, 400	Bari, 20	Guayaquil, 4	Sodium Silicate—
Philadelphia, 650	Genoa, 15	Hamburg, 355 10 dms. 350	Pisco, 7 brls.
Coal Products—	Havre, 15 cs.	Havre, 330	Starch—
Aniline Colours	Lisbon, 10	Kingston, 2	Ferrol, 10 cs.
Yokohama, 5 cs.	Smyrna, 5 bls.	Lagos, 1	Strontia—
Aniline Oil	Phosphorus—	Las Palmas, 490	Hamburg, 126 t. 1 c. £900
Genoa, 17 pks.	Kingston, Jam., 5 cs. £65	Leghorn, 1	Sulphur—
Philadelphia, 35 dms.	Potassium Bichromate—	Lytelton, 44	Pernambuco, 1 t. 14 c. 1 q. £11
Aniline Salts	New York, 15 c. £28	Malta, 75	Boston, 410 5 1,743
Boston, 9 t. 1 c.	Alexandria, 1 t. 44	Manaos, 150	Sulphuric Acid—
New York, 11 6	Potassium Chlorate—	N. Orleans, 2	Maranham, 2 t. 5 c. £24
Naphtha	San Francisco, 5 t. 7 c. £155	New York, 150	Kingston, Jam., 1 3 9
Copenhagen, 50 cks.	Corunna, 1 32	Old Calabar, 500	Manaos, 7 5
Pitch	Sydney, 3 103	Opobo, 1,000	Superphosphates—
Malta, 50 brls.	New York, 19 10 597	Para, 500	Aruca, 5 t. £10
Cobalt Nitrate—	Hamburg, 2 60	Pt. Natal, 500	Barcelona, 30 75
Nagasaki, 4 c. 3 q. £117	Naples, 1 30	Rotterdam, 300	Madeira, 20 1 c. 2 q. 60
Copper Sulphate—	Rotterdam, 1 10 51	Singapore, 405	Gd. Canary, 2 6
St. Nazaire, 1 t. 1 c. 3 q. £19	Bombay, 6 7	Sydney, 1	Libau, 1,049 18 2,135
Trieste, 10 2 159	Boston, 5 184	Talcahuano, 10	Danzig, 1,500 18 2,790
Syra, 10 9	Gutajewsky, 57 10 1,898	Trieste, 1 ck.	Tar—
Brisbane, 1 16	Genoa, 10 16	Trinidad, 1,260	Akassa, 12 brls.
Calcutta, 2 37	Odessa, 2 70	Soda—	Tartaric Acid—
Genoa, 5 10 86	Hiogo, 10 300	Maranham, 10 cks.	Savanilla, 1 c. 1 q. £9
Christiania, 5 7 2 80	Potassium Chloride—	Soda Alkali—	Varnish—
Tampico, 9 17 150	Corunna, 7 c. 2 q. £26	Leghorn, 40 brls.	Antwerp, 20 cks.
Singapore, 1 16	Potassium Prussiate—	Odessa, 100	B. Ayres, 3 cs.
Odessa, 3 3 1 48	Rosario, 5 c. £13	Soda Ash—	Calcutta, 20 dms.
Galatz, 4 10 71	Genoa, 19 2 q. 47	Aleppo, 8 brls.	Cape Town, 3
New York, 99 19 1,532	Potassium Silicate—	Ancona, 3 cks.	Coquimbo, 2
Bordeaux, 139 8 2 2,185	Amsterdam, 1 t. 4 c. 2 q. £5	Antwerp, 2,540 bgs.	Verdigris—
Ghent, 12 1 192	Salt—	Baltimore, 400	Yokohama, 13 c. 3 q. £18
B. Ayres, 7 8 2 113	Abonneima, 20 t.	Barcelona, 1,000 69 tcs. 68	White Lead—
Madras, 1 5 19	Akassa, 705 18 c.	Boston, 35 kgs.	Calcutta, 200 kgs.
Halifax, 5 5	Algoa Bay, 8 18 27,175 bgs.	Genoa, 100 bgs.	Gibraltar, 200
Copperas—	Ambrizette, 63 10 2,160	Hamburg, 466	Zinc Chloride—
Vera Cruz, 2 t. £4	Antwerp, 266 16 300 bgs.	Hiogo, 218	Bombay, 3 t. 15 c. £52
Disinfectants—	Baltimore, 250 2,000 sks.	Leghorn, 100	
Calcutta, 3 t. £44	Bakana, 200 500 bgs.	Libau, 100	
Guano—	Boston, 200 9 5	Maranham, 140 brls.	
Valencia, 29 t. 11 c. £210	Buguma, 44 13	Melbourne, 167	
Motril, 67 14 500	Cameroons, 500	Naples, 100	
Lime—	C. C. Castle, 2,000	New York, 93	
Addab, 7 t. 5 c. £16	Cape Town, { 23	Patras, 15	
Maranham, 3 3 2 q. 17	Chama, 275 sks.	Piræus, 25	
Manure—	Christiania, 500 bgs.	Rio de Janeiro, 358	
Vera Cruz, 1 t. 17 c. 1 q. £16	Copenhagen, 600 100 cs. 6,701 sks.	St. Petersburg, 8	
Sourabaya, 124 2 3 810	Delagoa Bay, 336 bgs.	Smyrna, 350 cks.	
Samarang, 17 15 165	Ghent, 60 1,500 sks.	Tampico, 45	
Las Palmas, 8 63	Gd. Bassa, 1,000 bgs.	Victoria, 46	
Montserrat, 20 6 2 50	Halifax, 4,502 pks.	Soda Crystals—	
Madeira, 22 171	Isles de Los, 2,489 sks.	Bahia, 15 cks.	
Paint—	Lagos, 3,787 bgs.	Calcutta, 6 brls.	
Antofagasta, 2 cts. 40 cs.	Monrovia, 6 1,400 400 sks.	Cape Town, 10	
Antwerp, 18 kgs.	Montreal, 11,118	Colon, 3	
Belize, 60	Newcastle, 192 1,500	Galatz, 5	
Beyrout, 7 brls. 92	Newport News, 2,000	Gibraltar, 31	
Buguma, 10	Noqui, 40	Kingston, 10	
Cape Town, 86 pks.	Opobo, 25	Malta, 50 kgs.	
Cartagena, 1	Orebak, 232	Montreal, 96 brls.	
Colon, 8 cks. 1	Rotterdam, 60	New York, 420	
Constantinople, 230 6 dms.	San Francisco, 300	Rio de Janeiro, 10	
Gibraltar, 2	Stockholm, 100	Valparaiso, 100	
Hamburg, 2	Syra, 5 c.	Sodium Arseniate—	
Havana, 4	Sydney, 100	New York, 10 cks.	
M. Video, 30 cs.	Valparaiso, 591	Sodium Bicarbonate—	
Nassau, 4	Para, 59 2	Alexandria, 45 brls.	
N. York, 327 pks.	Salt Cake—	Antwerp, 10 cks.	
Para, 20 4	Antwerp, 60 t. £68	Batavia, 40	
Philadelphia, 15	Sydney, 5 4 c. 14	Bilbao, 70 kgs.	
Ponce, 1	Saltpetre—	Bordeaux, 160 pks.	
Rangoon, 50 brls.	Maranham, 11 c. 3 q. £12	Brisbane, 100 kgs.	
Rio de Janeiro, 10	Savanilla, 5 2 6	Cape Town, 20	
Rio Grande de Sul, 30 pks.	Manaos, 1 t. 31	Christiania, 30	
Rotterdam, 1	Valparaiso, 13 4 274	Constantinople, 30 10	
St. John's, 8	Larnaca, 2 4 2 45	E. London, 30 20 50 bgs.	
San Juan, 2	Sheep Dip—	Hamburg, 180	
Santander, 20	Montreal, 5 c. 2 q. £10	Havre, 50	
Santos, 9		Hong Kong, 60	
Seville, 13 brls.		Honolulu, 50	
Sierra Leone, 1		Kingston, 25	
Smyrna, 80		Madras, 50	
Sydney, 7		Messina, 125	

MANCHESTER.

Week ending July 21st.

Albumen—	Rotterdam, 3 cks.
Alum—	Tripoli, S., 10 cks.
Ammonium Chloride—	Antwerp, 1 ck.
Aniline Colours—	Hamburg, 5 cs.
Aniline Oil—	Rotterdam, 1 ck.
Aniline Salts—	Rotterdam, 2 pks.
Caustic Soda—	St. Petersburg, 14 puns
Chemicals (otherwise undescribed)	Christiania, 1 ck.
Mersyne, 10 cks.	
Rotterdam, 9 20 kgs.	
Antwerp, 4 16	
Beyrout, 15	
Creosote—	Treport, 3 cks.
Creosote Salts—	Antwerp, 77 cks.
Linseed Oil—	Malta, 2 brls.
Tunis, 2	
Bussorah, 60 dms.	
Magnesia—	Tunis, 6 tcs.
Naphtha—	Treport, 28 cks.
Naphthol Salts—	Rotterdam, 4 cks.

Oxalic Acid —	
Bushire,	6 cs.
Paint —	
Jaffa,	3 bbls.
Bussorah,	5 cks.
Painters' Colours —	
Alexandria,	30 bbls.
Malta,	13
Paraffin Wax —	
Tunis,	5 bgs.
Potassium Bichromate —	
Bushire,	12 cs.
Soda —	
Jaffa,	10 bbls.
Sodium Bicarbonate —	
Hamburg,	100 kgs.
Mersyne,	10 bbls.
Sulphuric Acid —	
Bushire,	1 cs.
Tallow —	
Tunis,	1 bbl.
Tar Oil —	
Antwerp,	9 cks.
Tar Salts —	
St. Petersburg,	120 bgs.
Toluol —	
Rotterdam,	20 cks. 17 dms.

HULL.

Week ending July 17th.

Alkali —	
Bremen,	120 bgs.
Fiume,	5 cks.
Riga,	220 kgs.
Trieste,	16
Ammonium Sulphate —	
Ghent,	100 bgs.
Stettin,	755
Benzol —	
Rotterdam,	24 cks.
Bleaching Powder —	
Fiume,	21 cks.
Odessa,	12
Caustic Soda —	
New York,	275 dms.
Chemicals (otherwise undescribed)	
Amsterdam,	287 cks. 50 kgs. 1 cs. 12 pks.
Antwerp,	1
Bari,	13
Bergen,	2
Bordeaux,	20
Christiania,	180 slbs. 28
Danzig,	600 bgs. 4
Drontheim,	5 cks.
Gothenburg,	21 kgs.
Hamburg,	11
Kurrachee,	903
New York,	25
Odessa,	21
Rotterdam,	3
Riga,	42
St. Petersburg,	116
Trieste,	1
Stettin,	13
Venice,	20
Cottonseed Oil —	
Amsterdam,	1,311 c.
Antwerp,	606
Bordeaux,	303
Bremen,	100
Christiania,	10
Copenhagen,	33
Danzig,	57
Dunkirk,	121
Gothenburg,	197
Hamburg,	1,139
Rouen,	203
Rotterdam,	444
Stockholm,	103
Trieste,	102
Stettin,	297
Dyestuffs (otherwise undescribed)	
Amsterdam,	43 cks.
Hamburg,	1
New York,	9
Stettin,	25 1 cs.
Linseed Oil —	
Amsterdam,	135 c.
Bombay,	250
Bordeaux,	35
Constantinople,	42
Christiania,	762
Copenhagen,	35
Drontheim,	52
Ghent,	7
Hamburg,	293
Kurrachee,	22
Rotterdam,	206

Stavanger,	205
Trieste,	132
Venice,	72
Manure —	
Bombay,	15 bgs.
Jersey,	60 t.
Rouen,	705 bgs.
Stolpenmunde,	550 t.
Naphtha —	
Ghent,	8 cks. 7 dms.
Paint —	
Bombay,	155 kgs.
Painters' Colours —	
Amsterdam,	43 cks. 3 dms.
Antwerp,	48 2 cs. 142 pks.
Abo,	qty.
Bergen,	1 180 dms.
Bombay,	6 168 1,328 pks.
Boston,	21
Bordeaux,	1
Constantinople,	1
Christiania,	3
Copenhagen,	5
Danzig,	12
Dunkirk,	3
Ghent,	8
Gothenburg,	52
Hamburg,	16
New York,	167
Rotterdam,	70
Riga,	2
Stavanger,	8
Stockholm,	47 c.
St. Petersburg,	1
Trieste,	13 cks.
Stettin,	1 6 4 dms. 30 pks.
3,000 c.	
Phosphate —	
Danzig,	3,042 bgs.
Stettin,	qty.
Pitch —	
Danzig,	4 cks.
Soap —	
Christiania,	2 cs.
Dunkirk,	5
Rotterdam,	40
Starch —	
Amsterdam,	6 cs.
Tallow —	
Bombay,	30 cks.
Dunkirk,	51
Stockholm,	17
Amsterdam,	41 cs.
Abo,	38
Tar —	
Amsterdam,	15 cks.
Antwerp,	2
Copenhagen,	10
Dunkirk,	40
Drontheim,	20
Hamburg,	15
Rotterdam,	16
Stockholm,	10
Stettin,	5
Varnish —	
Antwerp,	7 cks. 10 dms.
Bombay,	125
Bordeaux,	1
Copenhagen,	1 1 cs.
Ghent,	1
Hamburg,	1 1 1
Rotterdam,	2 1
Stettin,	7

GLASGOW.

Week ending July 22nd.

Ammonium Sulphate —	
Stettin,	154 t. 0½ c.
Valencia,	552 15½
Rotterdam,	101
Bleaching Powder —	
Melbourne,	6 t. 2 c
Boracic Acid —	
Barcelona,	19½ c.
Bordeaux,	£23
Borax —	
Bordeaux,	£20
Castor Oil —	
Fremantle,	£71
Caustic Soda —	
Singapore,	4 t. 7½ c.
Coal Products —	
Creosote Salts	
Hamburg,	£20
Naphtha	
Dunedin,	£26
Pitch	
Calcutta,	£98
Canada,	114

Gothenburg,	750
U.S.A.,	48
Tar	
Calcutta,	£225
Madras,	47
Danzig,	1,266 bbls.
Coal Products (otherwise undescribed)	
Christiania,	£41
Rotterdam,	1,138
Dyestuffs (otherwise undescribed)	
Barcelona,	£60
Extracts —	
Victoria,	£61
Canada,	259
Linseed Oil —	
Cape Town,	13½ c.
Litharge —	
Johannesburg,	£41
Logwood —	
Canada,	£43
Manganese Oxide —	
U.S.A.,	£105
Manure —	
Bordeaux,	9 t. 4½ c.
Rotterdam,	498
Paint —	
Christiania,	£9
Calcutta,	£341. 15s.
Painters' Colours —	
Adelaide,	£57. 16s.
Melbourne,	qty.
Cape Town,	136 10
Paraffin Wax —	
Barcelona,	4 t. 5½ c.
Bordeaux,	£125
Danzig,	6
Plumbago —	
Spain,	£35
Potash Salts —	
Singapore,	1,920 lbs.
Mexico City,	£962
Potassium Bichromate —	
Barcelona,	32 t. ½ c.
Canada,	£127
Amsterdam,	706
Potassium Cyanide —	
Fremantle,	4 t. 5½ c.
Madras,	10
Soap —	
Calcutta,	3 t. 10 c.
Colombo,	1 7½
Sodium Bichromate —	
Barcelona,	15 t. 1 c.
Canada,	2 3¼
Starch —	
Rotterdam,	£20
Tallow —	
Spain,	65 t. 7 c.
Treacle —	
Gothenburg,	6 t. 13 c.
Delagoa Bay,	1 10
White Lead —	
Montreal,	£303
Bahia,	30

TYNE.

Week ending July 17th.

Alkali —	
Gothenburg,	8 t. 7 c.
Alumina Sulphate —	
Copenhagen,	1 t. 1 c.
Ammonium Carbonate —	
St. Petersburg,	2 t. 10 c.
Ammonium Chloride —	
Gothenburg,	19 c.
Antimony —	
Genoa,	2 t.
St. Petersburg,	35
Hamburg,	4
Quebec,	1 10 c.
Barium Bin oxide —	
Rotterdam,	6 t. 11 c.
Barium Carbonate —	
St. Petersburg,	63 t. 2 c.
Blanc Fixe —	
Genoa,	10 t. 5 c.
Bleaching Powder —	
Gothenburg,	30 t. 1 c.
Hamburg,	6 18
Antwerp,	20 3
Bergen,	14 17
Copenhagen,	7 18
Rotterdam,	12 1
Horsens,	2 2
St. Petersburg,	50 4
Christiania,	20 3

Castor Oil —	
Bergen,	18 c.
Caustic Soda —	
Hamburg,	9 t. 17 c.
Genoa,	7 12
St. Petersburg,	83 2
Christiania,	1
Extracts —	
Bergen,	6 c.
Lamp Black —	
Genoa,	13 c.
Litharge —	
Genoa,	11 c.
Hamburg,	1 t. 3
Copenhagen,	11
Gothenburg,	1 13
St. Petersburg,	2 15
Christiania,	11
Magnesia —	
Genoa,	3 t. 8 c.
Hamburg,	1 4
Barcelona,	2 9
Leghorn,	12 cs.
Manganese —	
Cette, F.D.,	2 t. 8 c.
Manganese Carbonate —	
St. Petersburg,	18 c.
Paint —	
Hamburg,	2 t. 13 c.
Copenhagen,	8
Genoa,	10
Potash —	
St. Petersburg,	19 c
Soap —	
Arendal,	1 c.
Soda —	
Randers,	18 t. 1 c.
Rotterdam,	20
Gothenburg,	1
Genoa,	5 3
Leghorn,	24 11
Christiania,	17 12
Arendal,	5 3
Soda Ash —	
Bergen,	6 t.
Christiania,	5 9 c.
Sodium Sulphate —	
Hernösand,	430 t.
Sulphate —	
Genoa,	5 t. 7 c.
Sulphur —	
Gothenburg,	10 t.
Tallow —	
Genoa,	2 t.
Naples,	16 c.
White Lead —	
Copenhagen,	3 t. 1 c.
Gothenburg,	1 5

GOOLE.

Week ending July 14th.

Chemicals (otherwise undescribed)	
Amsterdam,	40 cks.
Ghent,	30
Coal Products (otherwise undescribed)	
Antwerp,	100 cks.
Boulogne,	11 4 cs. 5 tins
Ghent,	1
Hamburg,	80
Rotterdam,	89 2
Colours —	
Antwerp,	1 ck.
Boulogne,	6 8 cs. 2 tins
Ghent,	3
Harlingen,	3
Rotterdam,	1
Dyestuffs (otherwise undescribed)	
Hamburg,	6 cks.
Manure —	
Antwerp,	180 bgs.
Ghent,	164
Rotterdam,	103
Soap —	
Rotterdam,	1 pk.

GRIMSBY.

Week ending July 17th.

Caoutchouc —	
Malmo,	1 bbl.
Coal Products (otherwise undescribed)	
Hamburg,	1 ck. 8 bils.
Colours —	
Antwerp,	1 ck. 1 cs.
Dieppe,	1

PRICES CURRENT.

WEDNESDAY, JULY 28TH, 1897.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary

Acids:—

	£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/9	& 8/6
" Glacial	"	40/-	
Arsenic S.G., 2000°	"	1	4 0
Fluoric	per lb.	0 0	3 3/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0 0	10
" (Cylinder), 30° Tw.	"	0 3	0
Nitric 80° Tw.	per lb.	0 0	1 5/8
Nitrous	"	0 0	1 3/4
Oxalic	nett	0 0	3 1/2
Phosphoric, 1750°	"	0 0	11 1/2
Picric	"	0 0	11
Sulphuric (fuming 50 %)	per ton	15	10 0
" (monohydrate)	"	5	10 0
" (Pyrites, 168°)	"	3	0 0
" " 150°	"	1	5 0
" (free from arsenic, 145°)	"	1	7 6
Sulphurous (solution) S.G. 1025	"	3	0 0
Tannic (pure)	per lb.	0 1	2 1/2
Tartaric	"	0 1	1
Arsenic, white powdered	nett per ton	22	0 0
Alum (loose lump)	"	4	10 0
Alumina Sulphate (pure)	"	4	2 6
Aluminoferrous	"	2	3 6
Aluminium (Ingot metal 98/99 3/4 %	nett	148	0 0
Ammonia, Anhydrous	per lb.	0 1	3
" 880 = 28° B.	"	0 0	2 3/4
" = 24° B.	"	0 0	1 3/4
" Carbonate	nett	0 0	3
" Muriate	per ton	18	0 0
" (sal-ammoniac) 1st & 2nd	per cwt.	33 1/2	& 31/-
" Nitrate	per ton	31	0 0
" Phosphate	per lb.	0 0	3 1/2
" Sulphate (grey) London	per ton	7	10 0
" (grey) Hull	"	7	10 0
Aniline Oil (pure)	per lb.	0 0	7 1/2
Aniline Salt	"	0 0	7
Antimony	per ton	29	15 0
" (tartar emetic)	per lb.	0 0	9
" (golden sulphide)	"	0 0	10
Barium Chloride	per ton	6	12 6
" Carbonate (native)	"	3	10 0
" Sulphate (native levigated)	"	42/6	to 65/-
Bleaching Powder, 35 %	nett	6	7 6
" Liquor, 7 %	"	3	10 0
Bisulphide of Carbon	"	12	0 0
Chromium Acetate (crystal)	per lb.	0 0	6
Calcium Chloride	per ton	2	2 6
China Clay (at Runcorn) in bulk	"	15/-	to 30/-

Coal Tar Products and Dyes:—

Alizarine (artificial) 20 %	nett per lb.	0 0	5 3/4
Magenta	"	0 3	4
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0 0	6 1/2
Benzol, 90's	per gallon	0 2	1
" 50/90	"	0 2	1
Carbolic Acid (crude 60°)	per gallon	0 1	11
" (crystallised 40°)	per lb.	0 0	7 1/2
" (liquid 95/97 %)	per gallon	0 1	0
Creosote (ordinary)	"	0 0	2
" (filtered for Lucigen light)	"	0 0	2 1/2
Crude Naphtha 30 % @ 120° C.	"	0 0	11
Grease Oils, 22° Tw.	per ton	2	15 0
Pitch, f.o.b. Liverpool or Garston	"	1	1 0
Solvent Naphtha, 90 % at 160°	per gallon	0 1	7
Copper	per ton	47	0 0
" Sulphate	"	16	0 0
" Oxide (copper scales)	"	44	10 0
Glycerine (crude)	"	30	0 0
" (distilled S.G. 1250°)	"	60	0 0
Iodine	nett, per oz.	0 0	7 1/2
Iron Sulphate (copperas)	per ton	1	10 0
" Sulphide (antimony slag)	"	2	0 0
Lead (sheet) for cash	"	13	12 6
" Litharge Flake (ex ship)	"	14	15 0
" Acetate (white ")	"	22	0 0
" " brown ")	"	15	0 0
" Carbonate (white lead) pure	"	16	15 0
" Nitrate	"	19	0 0

Lime, Acetate (brown) (ex ship)	per ton	4	15 0
" " (grey) (ex ship)	"	8	2 6
Magnesium (ribbon and wire)	per oz.	0 2	3
" Chloride (ex ship)	per ton	2	10 0
" Carbonate	per cwt.	1	17 6
" Calcined Magnesia	per ton	9	0 0
" Sulphate (Epsom Salts)	per ton	2	15 8
Manganese, Sulphate	"	16	0 0
" Borate	per cwt.	2	10 0
" Ore, 70 %	per ton	3	10 0
Methylated Spirit, 61° O.P.	per gallon	0 1	8
Naphtha (Wood), Solvent	"	0	2 9
" " Miscible, 60° O.P.	"	0	3 9

Oils:—			
Cotton-seed	per ton	16	0 0
Linseed	"	16	15 0
Stearine	per ton	19	10 0
Phosphorus (yellow)	per lb.	0 2	2
" (red)	"	0 2	8
Potassium (metal)	per oz.	0 3	7
" Bichromate	nett per lb.	0 0	4 1/2
" Carbonate, 90 % (ex ship)	per ton	16	10 0
" Chlorate	per lb.	0 0	4
" Cyanide, 98 %	"	0 0	10 1/2
" Hydrate (Caustic Potash) 90 %	per ton	23	15 0
" " (Caustic Potash) 75/80 %	"	20	0 0
" " (Caustic Potash) 70/75 %	"	19	10 0
" Nitrate (refined)	per cwt.	1	1 6
" Permanganate	per cwt.	3	15 0
" Prussiate Yellow	per lb.	0 0	5 1/2
" Sulphate, 90 % (ex ship)	per ton	9	15 0
" Muriate, 80 % (do.)	"	8	10 0
Silver (metal)	per oz.	0 2	3 1/2
Sodium (metal)	per lb.	0 2	11
" Carb. (refined Soda-ash) 48 %	nett per ton	4	15 0
" " (Caustic Soda-ash) 48 %	"	4	5 0
" " (Carb. Soda-ash) 48 %	"	4	0 0
" " (Alkali) 58 %	"	3	17 0
" " (Soda Crystals)	"	2	5 0
" Acetate (ex-ship)	"	12	5 0
" Arseniate, 45 %	"	14	7 6
" Chlorate	per lb.	0 0	4 3/4
" Borate (Borax)	net, per ton	14	15 0
" Bichromate	per lb.	0 0	3 3/4
" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	"	8	15 0
" " (74 % Caustic Soda)	"	8	0 0
" " (70 % Caustic Soda)	"	7	2 6
" " (60 % Caustic Soda)	"	6	2 6
" " (pure liquor 90° Tw.)	"	3	12 6
" " 77/78 % powdered (99 % hydrate)	"	12	10 0
" Bicarbonate	"	6	10 0
" Hyposulphite	"	5	0 0
" Manganate, 25 %	"	15	0 0
" Nitrate (95 %) ex-ship Liverpool	per cwt.	0 7	6
" Nitrite, 98 %	per ton	30	0 0
" Phosphate	"	10	10 0
" Silicate (glass)	per ton	4	10 0
" " (liquid, 100° Tw.)	"	3	10 0
" Stannate, 40 %	per cwt.	3	2 9
" Sulphate (Salt-cake)	per ton	0	19 0
" " (Glauber's Salts)	"	1	7 6
" Sulphide	"	6	15 0
" Sulphite	"	5	0 0
Strontium Hydrate, 100 %	"	10	15 0
Sulphocyanide Ammonium, 95 %	per lb.	0 0	6
" Barium, 95 %	"	0 0	4 1/2
" Potassium	"	0 0	6 3/4
Sulphur (Flowers)	per ton	7	10 0
" (Roll Brimstone)	"	6	10 0
" Brimstone: Best Quality	"	4	12 6
Superphosphate of Lime (26 %)	"	2	5 0
Tallow	"	18	0 0
Tin Crystals	per lb.	0 0	4 1/4
" English Ingots	per ton	65	0 0
Zinc (Spelter)	"	17	0 0
" Chloride (solution, 100° Tw.)	"	4	17 6
" Sulphate, Crystal	"	5	2 6

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Vol. XXI

Contents.

	PAGE		PAGE
Current Topics	81	Trade Notes	88
Galvanisers' Pickle and the Sewers	82	Tar and Ammonia Products	88
The Patent List	83	Miscellaneous Chemical Market	88
Abstracts of Latest Complete Specifications	83	Report on Manure Material	89
The Salford Sewage Scheme	83	Liverpool Oil and Colour Market	89
The Otte Patent Destructor	84	The Metal Markets	89
The Petroleum Hair-wash Fatality	84	Hull Paint, Oil, and Colour Report	89
Selected Correspondence	85	West of Scotland Chemicals	89
The Manchester Sewage Deadlock	85	Tyne Chemical Report	89
Parliamentary Jottings	86	New Companies	90
Legal Intelligence	86	Gazette Notices	90
The Working of the Explosives Act	86	Imports	90
Reports of Companies	87	Exports	93
Correspondence	87	Prices Current	96

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Readers will oblige by making their remittances for subscriptions by Postal or Post Office Order, crossed and payable to "Davis Bros."

Communications for the Editor, if intended for insertion in the current week's issue, should reach the office not later than **Tuesday morning**.

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CURRENT TOPICS.

A WORD FOR WASTE PICKLE.

FROM time to time the difficulties of galvanisers in the Wolverhampton district, arising from the disposal of waste pickle, have been recorded in these columns. It will be remembered that at one time something like a feud existed between the galvanisers and the Corporation, so that on every possible occasion the manufacturers were harassed by prosecutions; while the Lysaght incident is as yet hardly ancient history.

So far all of the various ways suggested for effecting some arrangement by which the Corporation and the manufacturers could co-operate to overcome the difficulty of treating the pickle, and yet prevent any injury to the sewers or trouble at the sewage works, have proved abortive. In consequence matters have remained in as unsatisfactory a state as ever.

A rift in the cloud has however now been made by the appearance of a report on the discharge of waste pickle into sewers, prepared by Dr. Fosbroke, for the Worcestershire County Council.

It is most consoling and encouraging to learn the views that this gentleman has arrived at, as they are views which we have gleaned or exchanged in discussing this question with manufacturers, and feasible as they might seem to most, the discussion always ended with the *ultimatum*: "It is all very true, but you will never get a Corporation official to think so."

When, therefore, a medical officer of health not only thinks something of these views, but has sufficient conviction of his opinions to give expression to the same in a report to the County Council, things may certainly be said to give some promise of a mutually beneficial solution being arrived at.

Dr. Fosbroke unhesitatingly states that nothing detrimental to health results from the discharge of the pickle into sewers, and he evidently thinks lightly of the damage that may be done to them. At the same time he points out that the treatment of the pickle is costly for the manufacturers, and in some cases an impossibility.

He therefore virtually advises that the pickle be admitted into the sewers, provided certain conditions are fulfilled. One of these is that payment shall be made when the pickle is wholly untreated. He also suggests that all the works shall be grouped and the discharge of the pickle placed under the control of an official. By the aid of this dual arrangement sudden rushes of acid can be avoided, while the discharge of the pickle can be regulated according to the flow of sewage, thus obviating any serious difficulty at the sewage disposal works.

Such is the gist of his report, and we have no hesitation in saying that manufacturers will do their best to make all plain sailing if the local and other authorities will meet them in return with a like spirit of forbearance and fair play.

WHAT IS MEANT BY PETROLEUM?

The unfortunate fatality with a so-called petroleum hair-wash, that receives notice in our correspondence and news columns this week, brings us face to face once more with one glaring anomaly in our Petroleum Laws, namely, What is the use of a law which conveys a misconception to nine out of ten people?

Petroleum to the majority means lamp oil—that is to the majority in this country at all events, and not unnaturally they think the Petroleum Laws are designed to regulate the sale, storage, and transit of this oil. But as a matter of fact petroleum is under absolutely no control whatever. The definition of petroleum in the Acts of 1871 and 1879 is such as to exclude lamp oil, and to have reference only to petroleum-spirit, or naphtha, which neither scientists in this or any other country call petroleum.

On the other hand, the poorest and most ignorant classes in this country are familiar with the danger of naphtha, which in their minds is associated with the naphtha lamps used in markets and at fairs. Now if it were clearly known to them that the word petroleum in the Petroleum Acts applied simply to these naphthas, which because of the mysterious inconcinnity of the definition are enabled to be described as petroleum, there is no doubt that people in general would be very shy of any hair-wash, lamp-oil, or other preparation whatsoever that showed the slightest connection with petroleum. But as things are at present they fancy that the existence of this very word in the title is a surety of Governmental surveillance.

It is thus possible to mislead people as to the real nature of a preparation, and yet the very act carries with it the protection of the Law, because the Law calls naphtha, petroleum.

If the present Parliamentary Committee cannot arrive at any other conclusions after their two years' sitting, there should be no difficulty in making provision for the remedy of this mischievous misnomer. It would prevent dangerous preparations escaping the attention of the London County Council officers, though they, as custodians of the law, ought to know that anything described as pertaining to petroleum is really naphtha, and calls for careful examination.

GALVANISERS' PICKLE AND THE SEWERS.

A REPORT has been made to the Sanitary Committee of the Worcestershire County Council by Dr. Fosbroke, county medical officer, on the subject of the discharge into the sewers of the waste acid from metal works, commonly known as galvanisers' pickle. The pickle usually consists of muriatic (hydrochloric) acid properly diluted, and is used cold, except that in cold weather it is sometimes warmed a little by the injection of steam. At some works dilute sulphuric acid, made to boil by blowing in steam, is employed. The pickle is usually contained in stone troughs, into which the articles are dipped, and where they are left for a sufficient time. On being removed they are allowed to drain, and then washed with water, to which in some cases lime is added to "kill the acid;" this water is technically known as "wash water," as distinct from "pickle." The object of so pickling iron is to remove the oxide on its surface, and to cause the metal to alloy with the commercial zinc, known as "spelter." During the pickling process, where muriatic (hydrochloric) acid is used, the waste pickle contains much muriate (chloride) of iron; on the other hand, when sulphuric acid is employed, sulphate of iron (green vitriol) is formed. Muriatic acid is preferred by the great majority of Worcestershire manufacturers, not only because it is cheaper than sulphuric, bulk for bulk, but also because the latter is said to act too quickly on "the skin" of the metal, and so tends to eat it away. To dissolve the oxide of iron from the surface of the metal the diluted acid requires to be of considerable strength; after use the waste pickle often contains about one-third of the acid added at the commencement of the process in addition to a large proportion of muriate (chloride) or sulphate of iron. In the course of my inquiry, says Dr. Fosbroke, I have visited a large number of works in several counties where such "acid" is employed, and have

communicated with many medical officers of health and analytical chemists, in order to ascertain "the extent to which acid turned into streams is injurious to health;" and I find there is a general consensus of opinion among such officials, that there is no evidence to support the view that "acid turned into streams is injurious to health." Some estimate of the magnitude of the galvanising trade in Worcestershire can be formed when I say that I learn through the courtesy of the seventeen manufacturers so engaged that at the present time they employ about 3,500 men, and utilise 1,053 carboys (hundredweights) of acid (corresponding to some 3,000 cwt. or 27,000 gallons of waste pickle) on an average every week. Comparatively few manufacturers in this county treat their "waste pickle;" some, however, tip it on to cinder heaps or throw it down disused pit shafts, while others discharge it directly into the river Stour, which from time to time consequently manifests a characteristic ochreous hue. With regard to the effect of pickle in its crude state upon sewers and sewage, I learn that brick sewers at Birmingham have fallen in at two points where such waste liquor has been discharged for a length of time, owing to the action of the acid upon the mortar, and the Wolverhampton sewers have also been injured. Iron pipe sewers are said to suffer more than stoneware. The report goes on to describe various methods adopted for treating "pickle," most of which involve considerable cost to the manufacturers. Continuing, Dr. Fosbroke says manufacturers as a rule are not only large ratepayers, but also large employers of labour; therefore, there can be no doubt that local authorities should, while protecting the general interest of the inhabitants of their districts, afford such traders every facility for the development of local industries. In the case of *Peebles v. the Oswaldtwistle Urban District Council*, Mr. Justice Charles gave judgment to the effect that a local authority could be compelled at the instance of a manufacturer to make such sewers as are necessary for carrying off effluents from factories within their district. This decision was, however, reversed on appeal, when it was decided that the proper remedy for any failure of duty on the part of the local authority would be by complaint under section 299 of the Public Health Act, 1875, that the authority were in default in such respect. This case has since been taken to the House of Lords, whose decision is anxiously awaited. Bearing in mind the present unsettled state of the law, and the advisability of the district authorities in the Stour Valley affording facilities for the development of local manufactures, it seems to me desirable that the authorities should offer the manufacturers terms for passing their pickle into their sewers. If the pickle be neutralised in the manner suggested and stored in duplicate tanks until it could be discharged into the sewers by a duly authorised person, the local authority could easily satisfy themselves that neither damage to sewers nor to sewage disposal works would result. On the other hand, as it would be most costly, if not impossible, for some manufacturers in that locality to put down the plant necessary for effective neutralisation, in my opinion the district authorities should also take into consideration how far they can assist such manufacturers in their difficulty, and arrange for untreated pickle to be received into the sewers, provided of course that no objectionable gases were thereby evolved, and suitable payments for such accommodation were made. In Wolverhampton, as I have previously stated, the Corporation took steps to prevent the local manufacturers from passing untreated pickle into their sewers; but in Birmingham, where very large volumes of waste acid are produced, no such action is taken, and the only recognised damage to the sewers which has resulted has been that on two occasions some brick-work fell in. I do not suggest that the discharge of the pickle should be hazardous, for I think it should be so controlled that rushes of acid may be prevented; and, as to this, there should not be much difficulty, for the time when pickle requires to be got rid of can be anticipated by the manufacturers, and consequently arranged for by the district officials. In order to obviate difficulty as to sewage disposal, if such procedure were countenanced, the discharge of the pickle should be under the control of some duly authorised person, who should make arrangements for the pickle to reach the sewers when the volume of sewage is largest (in the morning for instance), and in something like equal quantities from day to day. Grouping of the various works for the purposes of pickle discharge would effect this latter desideratum. Should the sewers in the Stour Valley district be damaged, the terms arranged between the manufacturers who care to make use of the sewers and the local authorities could be such that the ratepayers would not suffer.

LONDON UNIVERSITY COMMISSION BILL.—At a meeting of the Technical Education Board of the London County Council, held on Monday, the following resolution was unanimously adopted:—"That the board, being satisfied that the Bill now before Parliament makes adequate provision for inclusion within the scheme of the University of duly-qualified teachers and students in the polytechnic institutes (and other institutions aided by the board), and that the special interests with which the Technical Education Board is concerned have been duly safeguarded, hereby approves the Bill and expresses its desire that it may be passed into law this Session."

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Portable Syphon Filter. C. T. Giles. 17,008. July 19.
 Manufacture of Ethyl Chloride. P. Sylva. 17,013. July 19.
 Electro-depositing Devices. J. Bossard. 17,092. July 20.
 Means for the Electrolysis of Salts. J. Hargreaves. 17,161. July 20.
 Sewage Treatment. J. B. Petrie. 17,261. July 22.
 Distilling Ammonia. K. J. Krebs. 17,313. July 22.
 Treating Complex Zinc Ores. J. Armstrong. 17,401. July 23.
 Explosives. W. Hope. 17,417. July 23.
 Manufacture of Hydraulic Cement. N. T. Ashton and J. Crompton. 17,419. July 23.
 Supplying Air to Furnaces. J. J., T. F., and J. W. Meldrum. 17,437. July 24.
 Cooling and Mixing Gases, etc. Forbes, Abbott and Lennard, Ltd., and L. Gasker. 17,475. July 24.
 Manufacture of Flowers of Sulphur. R. H. Davidson and the United Alkali Co., Ltd. 17,476. July 24.

ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

These abstracts are specially prepared for the Chemical Trade Journal, and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.

Improvements in Apparatus for Grinding, Crushing, Pulverising, or Disintegrating Substances. J. N. Askam, Yorkshire Steel Works, Sheffield. Eng. Pat. 15,506. July 13, 1896.

The crushing is accomplished by rollers caused to revolve in a casing into which the material to be crushed is fed. The apparatus is on the duplex principle, and special attention is paid to the arrangement of the parts so as to facilitate removal for cleaning or substitution. The feeding devices are automatic, being operated by belts and pulleys from the main shaft. In addition to rollers there are agitators fitted within the casing. The material as ground is thus forced against a sieve, through which the fine portions pass into the collecting box. The fly wheel is also so fixed that on any sudden stoppage of the shaft it disengages and revolves freely. There are six full page drawings.

Improvements in Means and Appliances for Administering, Governing, and Measuring Nitrous Oxide and Oxygen for the Purposes of Inhalation. Manchester Oxygen Co., Ltd., and W. M. Jackson, of Great Marlborough-street, Manchester. Eng. Pat. 16,392. July 24, 1896.

The two main features in the mechanical arrangements for regulating the supply of oxygen or other gas are the special governor and the indicator, which shows how much gas has been used. The governor is of the bellows pattern, the top cover of which connects with a ball stop valve. By external and internal springs this valve is finely adjusted, so that by a slight inhalation a momentary reduction of pressure is effected in the bellows, causing the ball valve to drop and admit gas from the compressed gas cylinder, whereby the equilibrium is immediately restored. The indicator is really a spring balance, which carries the cylinder and the usual reducing valve, etc. A cylinder of gas is suspended from the balance, and the index finger set on the dial to the figure that corresponds with the known volume of gas in the cylinder. As the gas is used the cylinder grows lighter, and by a rack and pinion the index finger is revolved, and indicates the volume of gas consumed. The governor can be fixed to a table or wall in any convenient position, and connected both with the operating chair and the cylinder by rubber tubing. There are three drawings.

Improvements in the Manufacture of Oxide of Lead and Means Used therefor. A. Gutensohn, 24, Bloomfield-road, Burdett-road, London, E. Eng. Pat. 16,276. July 22, 1896.

The chief point seems to be that air enriched with oxygen, or the gas itself, is used to oxidize the molten lead. Three crucibles are arranged in steps. The topmost, which is the melting pot, is connected with the oxidizer, which is next in order, by a pipe passing from the bottom of one to the bottom of the other. Both are heated by furnaces. The oxidizer has a wide rim in which is a gutter. As the oxygen is blown on to the surface of the molten lead the oxide overflows into this gutter, and finds its way into the third crucible. Any molten lead separates therein, and the oxide is skimmed off and treated in the usual way. A hood collects the gases from the oxidizer and carries them through a pipe to a condenser. The rate at which the oxide overflows into the gutter is regulated by the supply of lead from the melting pot. Several advantages are claimed for the oxide so formed, especially in connection with the manufacture of white lead. There is one diagram.

Improvements in Electrolytic Apparatus. G. Kellner, 29, Wasagasse, Vienna IX. Eng. Pat. 16,057. July 20, 1896.

By using a special form of electrode in which points or edges are substituted for the usual plate surface, the current density can be increased and regulated at will. The particular arrangement is composed of a wire net work carried by a dielectric substance, it being essential that the points or edges are so arranged that the lines of force when projected on an imaginary plane passing through the next electrode will not fall into each other, but lie side by side. Various ways of constructing the electrode are described. There are two figures.

Improvements in the Treatment of Sulphide Ores of Lead Preparatory to Smelting the same, and incidentally in Obtaining Sulphurous Acid. G. G. M. Hardingham, 191, Fleet-street, London, E.C. (communicated by T. Huntington and F. Heberlein, both of Pertusella, near Spezzia, Italy). Eng. Pat. 3,795. February 12, 1897.

Lead sulphide ores, or galena, are mixed with calcium oxide in proportion to the amount of sulphur present, and heated to about 700°C. The mass, on being allowed to cool to about 500°C., decomposes, giving off oxygen, which in the nascent state attacks the lead forming a mixture of oxide and sulphate, much heat being generated at the same time. If air is now blown into the mass, the reaction becomes continuous, and the heat is maintained sufficiently to ensure the reaction between the sulphides and sulphates. At this stage sulphur dioxide is given off, and is collected. The resulting mass of lead oxide and gangue is treated in the usual way. In place of lime ferrous or manganous oxides may be used.

THE SALFORD SEWAGE SCHEME.

AT the Salford Council meeting on Wednesday, this week, Mr. Foden moved the following resolution:—"That the resolution passed on the 30th December, 1895, adopting a scheme for the treatment of sewage, and the resolution passed on the 12th July, 1897, authorising the River Irwell Conservancy Committee to borrow £80,000 for the purpose of sewage disposal, be, and are hereby rescinded, and that the offer of the Bacillite Syndicate be accepted—namely, to treat the Salford sewage at a cost of 31s. 9d. per million gallons, the syndicate to put down the necessary plant on the Corporation Sewage Works (such plant to belong to the Corporation at the end of ten years), and that the syndicate deposit a sum of £2,000, with the bankers of the Corporation as a cash guarantee that their effluent will satisfy the requirements of the Joint Committee."

The Mayor said it had been pointed out to Mr. Foden, and he had agreed, that it was desirable to divide the resolution, and treat it as two. The Council therefore had before it only the first part of the resolution, ending at the word "rescinded." Mr. Foden, in advocating the adoption of his proposal, reminded the Council of the manner in which the estimated cost of the work had risen from £35,000, to £83,000., the latter being apart from the cost of removal of the sludge, which would probably be £10,000. more. He suggested that eight or ten members of the Council should be appointed on the River Irwell Committee to aid them in coming to a final conclusion. Mr. Alderman Rudman seconded the motion.

The Mayor said he would like to ask the Town Clerk what position they would be in with Judge Parry in case that resolution was passed.

The Town Clerk said they would be in a difficult position. They had only an extension of time granted on condition that the Council's decision was brought before the Court to show that they had resolved to borrow money to carry out the scheme.

Mr. Alderman Bowes reminded the Council that they had had experiments for a long time in connection with the treatment of sewage, and he spoke against the resolution.

Mr. Phillips also opposed the resolution, remarking that if the Council interfered with the Irwell Committee when it made a step forward they would have no advance at all.

Mr. Yearnshaw was in favour of the appointment of a committee to go into the matter, and said he was satisfied that if men who were of independent mind were allowed to judge they would not go into this expenditure of £80,000.

Mr. Foy supported the resolution, and urged the appointment of a select committee.

Mr. Alderman Walmsley denied the incompetency of the Committee, and said that if eight other men were appointed on it they would have to be educated as the Committee had been. Every member of the Committee understood the question, and gave a conscientious vote. To add to their number would be to open the serious question of the resignation of the Committee. The expense of dealing with the sewage would be very great, whether on this or any other system, but it was a matter which they had to face.

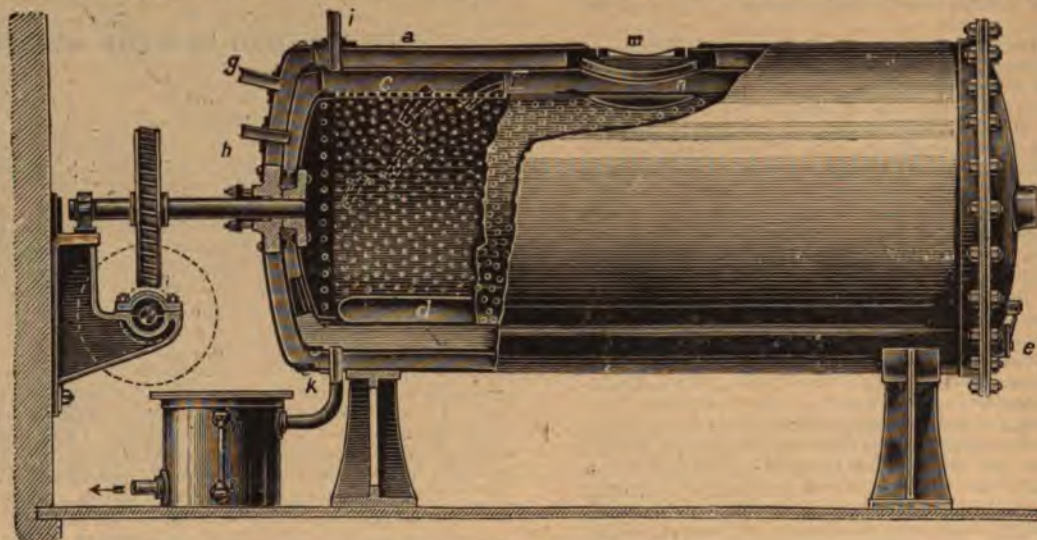
The resolution was lost, and, a record being taken, there voted for the resolution 12, and against it 18. It was therefore declared lost.

THE OTTE PATENT DESTRUCTOR.

AN important addition to sanitary appliances is to be found in the drying and economic destroying plant which we illustrate herewith. The present system of recovering the fat, glue, and other products from condemned carcases is not of the nicest for the workmen, or the most satisfactory from an hygienic point of view.

The following description of the Otte plant, which has been introduced into this country by Mr. R. Simon, Zulla Road, Nottingham, will indicate several points in which this plant and process show to advantage:—The principal part of the plant consists of a jacketed cylinder, the disinfectant or sterilizer, within which is a revolving drum, having openings in its periphery, and containing a solid roller, which latter grinds the charge and, after extraction, forces the produce through the ports in the drum into the jacketed cylinder, where they are dried. The drum rests on a strong shaft, and can be revolved in either direction by means of a worm wheel. On the inner surface of the jacketed cylinder are fixed shovels, which agitate and turn over the flesh meal, by which the drying process is materially accelerated, and at its conclusion the machine is automatically emptied. Connected with the sterilizer is a separator, which separates the fat and glue by a continuous action, while the gases are drawn off by a pump, and passed into the boiler fire.

The working of the machine is as follows:—The machine having been charged through a funnel or by the manhole, with about 24 cwt. of pieces of flesh, etc., the inner drum is closed by a slide and the whole machine by a steam tight cover. Steam at a pressure of 60 to 90 lbs. is admitted into the jacket of the cylinder to heat it, while the drum is



OTTE'S PATENT PLANT.

caused to revolve, and the pump started to draw off the gases. After a suitable time has elapsed the ejector is stopped and steam admitted to the inside of the cylinder, whereby the boiling process is commenced, the rotation of the drum being continued for another hour. In three hours more the extraction of glue and fat is completed, both liquids being collected in the separator, whence they are drawn off into the size-receiver and into the fat-steamer or purifier.

In order to desiccate the residuum, the steam is shut off from the inside of the cylinder and admitted to the jacket. A to and fro motion is given to the drum, while the pump draws off all steam and gases from the interior, and thus creates a vacuum. After four hours the whole of the contents have been ground by the roller and forced through the ports in the surface of the drum and are quite dry. The pump is stopped and the door opened, whereupon the contents are discharged automatically, leaving the machine ready for another charge. A charge of 24 cwt. consisting of two horses, two quarters of beasts, four calves, and ten dogs, yielded after three hours' boiling and five hours' drying, 6 cwt. 10 lbs. fat, and 4 cwt. 1 qr. guano (manure), about 12 cwt. of coals having been used. The fat contains about 1½% of water. The average composition of the manure is—water, 6 2%; nitrogen, 6 47%; and phosphoric acid 13%.

In reporting on some trials made by himself, Mr. C. F. C. Dahl gives the following interesting figures:—

	Fat.	Guano.	Time boiling.	Time drying	Coal used.
I. 2400 lbs gave	7 0 lbs.	4 0 lbs.	3 hours	5 hours	700 lbs.
II. 2400 " "	600 "	540 "	3 "	5 "	700 "
III. 2400 " "	625 "	500 "	3 "	5 "	700 "

The fat was of excellent quality, and realised 18s. to 20s. per 100 lbs. The guano was well dried and good. Only one man is required to charge and attend to the plant. With a moderate consumption of coal and the attendance of one man it is possible to work about 3,000 lbs. flesh and bones in eight to nine hours daily.

The apparatus has also been successfully applied to the extraction of bones to recover the fat and size. The temperature and pressure can be regulated to suit all requirements.

THE PETROLEUM HAIR-WASH FATALITY.

AT the resumed inquest on the body of Mrs. Fanny Isabel Samuelson, who died from severe burns sustained with a petroleum hair-wash (*C.T.J.* 532, p. 69, Miss Plummer, bookkeeper and saleswoman at the hairdresser's, said it was her duty to turn out the lights in the saloons after customers had been. On the day of the accident two ladies attended before Mrs. Samuelson, and after they left witness saw all the lights were out. Witness denied that she had seen live matches on the floor of the saloon. She had seen them on the floor of the shop, and had seen them ignited by being trodden upon.

Mrs. Micklethwaite, of Ardsley Hall, Barnsley, said she was in the shop when the explosion occurred. She ran into the street, but on hearing that a woman was on fire went back. The flames on Mrs. Samuelson were then extinguished, and her head was wrapped in a

dressing-gown. Witness removed the gown, and the lady said, "My God, I am in awful agony! what can you do to put me out of my misery?" She talked wildly about her children and her husband, and advised witness never to have her head washed with petroleum. She made no complaint as to the treatment received.

The medical testimony was that death was due in the first instance to blood poisoning after burns.

Mr. Spencer, chief officer of the petroleum department, London County Council, said this hair-wash contained highly inflammable petroleum spirit, and it must be dangerous to apply to human hair.

A verdict was returned to the effect that death was due to burning, caused by the ignition of petroleum hair-wash, but how ignited there was no evidence to show. [*Viz* Correspondence, page 85.—*Ed. C.T.J.*]

MESSES TROTTER AND SON, LIMITED. — The directors of Trotter and Son (Limited), Chirside Bridge Paper Mill, announce that the dividend for the past year will be at the rate of 15 per cent. per annum. They have also resolved to issue 4,000 preference shares £5. at par, entitled to a cumulative preferential dividend at 5 per cent. per annum.

PETROLEUM FATALITIES. — At King's Lynn on Tuesday, Charlotte Sutton, an elderly woman, was lighting a small oil stove when it turned over. The flames ignited her dress and she was burnt to death. — Late on Saturday evening a fire caused by the upsetting of a lamp occurred at 34 Swinton-street, Gray's-inn-road, E.C., resulting in the death of a child named Violet Barnes.

Selected Correspondence.

EXPLOSIVE HAIR WASH.

(To the Editor of the Times.)

SIR,—The public do not expect very much from coroners' inquests, but they certainly have a right to be surprised at the extraordinary manner in which obvious issues were set aside in the inquest upon Mrs. Samuelson. Far-fetched and even impossible explanations of the manner in which the petroleum vapour may conceivably have been ignited were trailed as red herrings across the scent; while the obvious and patent line of inquiry was allowed to be closed by absolutely illusory evidence.

That an explosive mixture may be ignited by an electric spark is perfectly true, but that any such spark can be produced from hair soaked in a liquid is a proposition which may safely be dismissed as absurd. This unfortunate lady was not merely scorched by a momentary flame, but was severely burned by her hair and clothes being actually on fire. It is in evidence that they were still burning when the doctor arrived, consequently they must have been wet with the inflammable liquid. At all events, that jurymen had the root of the matter in him who expressed his dissatisfaction that the chemist of the County Council had made no experiment to settle this point. Nothing could be simpler than to reproduce the conditions, and thus furnish justice with knowledge instead of vague and improbable conjecture.

The theory about the flow of vapour into another room, where it may have encountered a light is equally irrelevant, in the absence of any attempt to show that anything of the kind actually occurred. Had such a thing happened there must have been flame and explosion first in the room where the light was found.

All this time the plain fact is carefully ignored that there was a stove in the room where the hairwashing was carried on, that it was the business of the operator to light it for the heating of his irons, and that there is no reliable evidence to show that it was not actually alight. Inquiry would prove that on other occasions, if not on this one, ladies' hair has been washed with petroleum in a room where the crimping irons were heated by a gas flame. This is the obvious common-sense explanation, and it involves gross carelessness calling for severe censure. But this line of inquiry was closed by the ludicrously inadequate evidence of a young woman who said she had put out the light after a previous customer had been washed. This goes to prove that the stove was alight for the previous customer, and does not prove that the operator did not re-light it for Mrs. Samuelson.—I am, your obedient servant,

R.

(To the Editor of the Times.)

SIR,—As a warning that may possibly be useful in preventing the recurrence of any such terrible accident as that which recently happened through the ignition of an inflammable hair-wash, it ought to be generally known that the faintest electric spark suffices to ignite an inflammable mixture of a combustible gas with air. This is illustrated in elementary lectures on electricity by "Volta's cannon"—a little varnished brass gun, mounted on a glass pillar, and having a wide touch-hole plugged with sealing wax, in the centre of which is mounted a brass wire carrying a little brass knob outside and projecting inside to within 1-20th of an inch of the end of another brass wire fixed to the metal of the gun. The gun is filled with an explosive mixture of oxygen and hydrogen, and its muzzle is plugged with a cork. The varnished outside is struck with a piece of cat-skin, and, thus electrified, the gun is left insulated on its glass pillar. To fire it, all that is necessary is to touch the projecting knob with the finger. This causes discharge of the electricity by two exceedingly faint sparks, one barely, if at all, perceptible by the finger before contact with the knob outside, the other in the 1-20th of an inch air-space within the explosive mixture inside. A loud explosion is heard, and the cork is projected with sufficient violence to tear a canvas picture if it chanced to touch one.

Ignition of vapour of benzene by electric spark is well known to dyers in their process for cleaning silks and other fabrics by boiling in large cauldrons of liquid benzene. When the goods are taken out of the cauldron and spread out to dry on a table explosions have often taken place; and I believe it is quite certain that an electric spark, caused by some slight friction between dried or partially dried portions of the fabrics, is the incendiary. We all know how readily electric sparks, visible in the dark, and perceptible to the ear by slight crackling sounds, are produced by drawing a hand over very dry hair or the teeth of a comb through it.

In the recent inquest it was stated that the merit of the hair-wash was that it dried so readily. The hairdresser said he felt the hair warm in his hand and immediately after that all was enveloped in flames. The fact that the hair seemed warm to the hand was due, not to the beginning of some kind of spontaneous combustion, as must, I believe, have been imagined by many readers of the report. It showed merely

that the part of the hair touched had quickly become dry. Very slight friction of the hand on the dry hair would suffice to produce an electric spark; and the explosive atmosphere of air mixed with combustible vapour, from the portions of the hair not yet dry, was there. The conclusion of the inquest shows that no gas was burning in the neighbourhood, and that no lucifer matches were lying about on the floor which could have been ignited by being trodden on. A gas-flame within a yard or two of the place would certainly have been dangerous, but far less apt to produce the disaster than an electric spark from the hair in the very place of greatest liability to the presence of an explosive mixture.—Your obedient servant,

The University, Glasgow, July 30.

KELVIN.

THE MANCHESTER SEWAGE DEADLOCK.

A SERIOUS division of opinion exists among the members of the Rivers Committee of the Manchester Corporation with reference to the purification of the effluent from the sewage works at Davyhulme. It will be remembered that a clause was inserted in the last Parliamentary Bill empowering the Committee to take the effluent by means of a conduit or culvert to the tidal waters of the Mersey without further purification. This clause was withdrawn from the Bill on account of the opposition offered at the town's meeting and by the Mersey and Irwell Rivers Joint Committee. As an alternative proposal the committee, upon the advice of Sir Henry Roscoe, have been considering the feasibility of purifying the effluent by means of artificial filtration. The City Surveyor (Mr. T. de Courcy Meade) having been instructed to prepare an estimate of the cost of the provision of filters, and the cost of working them, has reported that the experience gained from continued experiments with the model filters at Davyhulme leads him to believe that 800,000 gallons per acre would be the maximum quantity of Manchester sewage that could be dealt with under favourable circumstances, and he therefore considers that for the purposes of this estimate 600,000 gallons per acre would be sufficient, especially having in view the fact that the character of sewage has altered since the date of Sir Henry Roscoe's report, and a further alteration is likely to take place when the sewage of Clayton and other districts has been intercepted. The City Surveyor is therefore of opinion that the area of artificial filters to be provided should be increased from 40 to 50 acres, which at an average cost of £5,500 per acre would amount to £275,000. The cost of working the model filters does not form any guide to the cost of working the filters on a large scale, and the City Surveyor is unable therefore to give any closer estimate of annual cost than that mentioned in a former report—£5,220. With a view of affording means of arriving at the probable cost of working a proposal has been put forward to provide two experimental filters, each one acre in extent. This proposal has been rejected by a large majority of the Committee, as was also another proposal to provide four experimental filters a quarter of an acre each, at an estimated cost of £6,317. The opponents of artificial filtration contend that the requisite area of filter beds would cost an enormous sum of money without being of any permanent value; inasmuch as the filtering material would have to be renewed at the end of every four or five years at an estimated cost of not less than £110,000. Under these circumstances it is urged that it will be a complete waste of public money to make any further experiments. The cost of treating the sewage by precipitation at Davyhulme, it is stated, amounts to £2.14s. per million gallons, the resultant effluent being much better than the waters of the Ship Canal into which it flows. "Culvert or nothing" is therefore the proposal which the majority of the Committee will ask the City Council to sanction. It may be stated that the twelve months' grace granted to the Corporation of Manchester in consequence of action brought against them by the Mersey and Irwell Joint Committee shortly expires.

SANITAS COMPANY, LIMITED.—The directors have declared the payment of an interim dividend at the rate of 10% per annum, payable on and after September 1st next.

MESSERS BOWMAN, THOMPSON, AND CO., LTD.—The directors of this Company declare the interim dividends for the half year ending June 30th at the rate of 7 per cent. per annum upon the preference shares, and at the rate of 7½ per cent. per annum on the ordinary shares.

Obituary.—It is with regret that we announce the death of Mr. Joseph Moseley, which took place at his residence, Cringle Hall, Levenshulme, on Tuesday evening. For very many years Mr. Moseley took an active part in the management of the firm of David Mosely and Sons, india-rubber manufacturers, of Ardwick, Manchester. Since the demise of Mr. Charles Moseley, nearly ten years ago, he has conducted the affairs of the great concern founded by his father, and under his direction and control the business made still further strides. The deceased gentleman, who was 61 years of age, had been in failing health for some time past, but his death came somewhat unexpectedly.

Parliamentary Jottings.

THE RIVER BRENT.

In the House of Commons this week Mr. Bigwood asked whether any steps were being taken by the Local Government Board to assist the Middlesex County Council in their endeavour to remedy the state things existing in the river Brent.

Mr. Chaplin said that on Friday last week he stated that he had ordered an inspector to go down and immediately report on the state of the Brent. On Saturday morning he received the report. By arrangement with the officials he had an interview with the chairman of the Middlesex County Council, and the same afternoon he despatched to him what, according to the views put before him, were the instructions necessary to enable him to take immediate steps for the purification of the river Brent.

SALE OF FOOD AND DRUGS BILL.

Mr. Chaplin, in asking leave to introduce a Bill to amend the Acts relating to the sale of food and drugs, said it was unusual to do so at this late period of the session. (Ironical cheers.) There was, however, no intention whatever of proceeding with it. (Ironical laughter.) It was merely brought forward in fulfilment of a pledge given earlier in the session. (Ironical laughter and cheers.) The object of the Bill was to give effect to recommendations which were made by the committee which sat on the question of food and drugs; and his object in introducing the Bill now was in order that during the recess they might be able to ascertain the general drift of opinion with regard to the question.

The right hon. gentleman brought up the Bill amid Opposition cheers, and it was read a first time.

THE WATER FAMINE IN THE EAST END.

Mr. Bigwood (Middlesex, Brentford), asked the secretary to the Local Government Board whether his attention had been called to a letter in *The Times* from the vicar of St. Jude's Whitechapel, giving details of the water famine in the East-end of London, and whether an assurance of the Department would be given that the best endeavour would be made to minimise as far as possible the sufferings of these unfortunate people.

Mr. T. W. Russell (Tyrone, S.) said that up to the hour when the House met no complaints had reached the Department as to the insufficiency of the water supply, but on reading the letter in *The Times* he despatched General Scott to the locality. It was found that, being Bank Holiday, none of the responsible officials were at the company's offices. There had, however, been a serious burst in one of the mains. He despatched General Scott later to the various blocks of buildings referred to in the vicar of St. Jude's letter, but he was now waiting his return and the report.

Lord H. Cecil (Greenwich) asked whether the Government would consider the propriety of moving an amendment in the Water Companies Bill in another place with the view of altering the date for the Bill to come into force? At present the date was November 1, but he thought its provisions might be made to apply to any water famine during the present summer.

Mr. Chaplin (Lincolnshire, Sleaford) said that he had considered this point since he had received information with reference to the water supply, and if it was possible to do so he would take steps in the direction indicated.

SHELL-LOADING PROCESSES.

Mr. Gretton (Derbyshire, S.) asked the Financial Secretary to the War Office whether a description of the process of loading shells with high explosives had been published in any of the official text-books or manuals issued for use by the ordnance factories, or whether the process had been notified in the list of official changes; and whether all processes of such a character were usually so published, unless considered confidential.

Mr. Powell-Williams (Birmingham, S.)—The method of filling shells with high explosives has not been published in any manual, as the process is only carried out in the Royal Arsenal. A description of it would be useless to officers at out-stations. So far as secrecy is concerned there would be no objection to the publication.

THE GERMAN AND BELGIAN TREATIES.

On Wednesday Mr. Courtney called attention to the denunciation of the German and Belgian treaties. He did not dispute the policy or the necessity of the action of the Government in that respect, but the step has been made the subject of much comment. In his opinion it will lead to a battle of tariffs.—[In view of the action taken by the Government in denouncing these treaties, the meeting of the Manchester Chamber of Commerce, which had been convened to confirm a resolution of the Board, urging that the above course should be adopted, has not been held.]

Legal Intelligence.

HIGH COURT OF JUSTICE. QUEEN'S BENCH DIVISION.

(Before Mr. Justice Mathew without a Jury.)

NOBEL'S EXPLOSIVE COMPANY (LIMITED) v. W. D. REA.

This was an action by cargo owners against shipowners claiming a declaration that they have a right to recover from the defendants the contributions properly payable by the ship, freight, and rest of the cargo as a general average loss. The claim arose under the following circumstances. The plaintiffs' goods, 15 packages of detonators, valued at £165. os. 6d., were shipped on board the defendants' ship at Liverpool on September 27, 1895, to be carried to Rio de Janeiro. For the safety of the ship and cargo the plaintiffs' goods were jettisoned on October 4, 1895. On October 5, 1895, the ship arrived at Rio de Janeiro, and the rest of the cargo was delivered to the different consignees without requiring them to enter into a bond for the payment of what should be found due from each of them for his proportion of the loss suffered by the plaintiffs.

Mr. Carver, for the defendants, said he should not contend that it was not the captain's duty to take a bond, but the plaintiffs had to prove they were damaged by his not doing so. The liability of the different cargo owners still existed, and the plaintiffs had made no efforts to enforce their rights. The fact that the captain did not take a bond did not prevent the plaintiffs from prosecuting their claim, and if they failed they could then have come down on the shipowners.

Mr. Boyd, Q.C. (Mr. Joseph Walton, Q.C., with him), for the plaintiffs, said that it was the captain's duty to take a bond. The plaintiffs did not know who were the other consignees of cargo, and therefore could not sue them. He cited "*Crooks v. Allan*" (5 Q.B.D., 38, and at page 41), "*Strang v. Scott*." (14 App. Cas., 601, and at page 605).

Mr. Justice Mathew in giving judgment said it was clear from the cases cited that the master was bound to take proper steps to procure contributions. The master refused to take proper steps or give any information. The plaintiffs were entitled to be put in the same position as if the bond had been taken and the plaintiffs had been in a position to assert their rights against the other consignees.

Judgment for plaintiffs for amount claimed, £165. os. 6d., with costs.

THE WORKING OF THE EXPLOSIVES ACT.

A BLUE-BOOK just issued contains the report for the year 1896 of her Majesty's Inspectors of Explosives, giving details of the working of the Explosives Act, 1875. The Inspectors state that the growth of the trade in explosives referred to in their last report had in no sense relaxed during the past year. Five new factories had been added since 1895, making a total of 139 under continuing certificate and licence, to which 207 visits had been paid. The inspectors report that there has been no falling off in the high standard previously attained in the great majority of the factories, while some of the places which had formerly lagged behind have been brought more into line with the rest. While the actual number of factories has largely increased, and also, in many cases, the output of an individual factory, and consequently the number of hands employed and the resulting chances of accident, the number of deaths from accidents by fire or explosion in manufacture was one only. Out of 358 samples submitted for licence and examined by Dr. Dupré only 32 were rejected, and of the latter nine were amorces. The amount of foreign nitro-glycerine imported in 1896 was 1,259,200lbs. as compared with 880,070lb. in 1895. The amount of dynamite imported in 1896 was 179,000lb., against 56,000lb. in 1895. The number of accidents by fire or explosion of which the department had cognizance during the year was 134, causing, so far as is known, 33 deaths, and injuring 111 persons. But nearly four-fifths of these accidents occurred in the use of explosives and under miscellaneous conditions to which the controlling provisions of the Act do not apply. The number of accidents in factories (46) is below the average (51.6) for the last ten years; while out of the total a little more than one-half were unattended with personal injury. Under the section "*Outrages and Attempts*" the report refers to the Lewisham High-road letter-box explosion, the Bath bomb outrage, and the discovery of dynamite at Antwerp. In connexion with the last-mentioned of these, the report states:—"What was undoubtedly a formidable dynamite plot was frustrated by the prompt action of the police in simultaneously arresting four men—Tynan, Bell, Wallace, and Haines. The two latter were arrested at Rotterdam, and in a house in Antwerp recently vacated by all four men were found portions of infernal machines and some dynamite, and extradition was refused for three of the suspects. The fourth man, Bell, was brought to trial at the Old Bailey, and after two days' proceedings the prosecution was abandoned by the Crown."

Reports of Companies.

THE BRITISH ALUMINIUM COMPANY, LIMITED.

An extraordinary general meeting of this company was held recently at the Westminster Palace Hotel, Victoria Street, S.W., Mr. R. W. Wallace, Q.C. (the chairman of the company), presiding.

The Chairman said: Gentlemen, since our last meeting several of the shareholders have expressed a desire to know what the legal position of this company is, in so far as the monopoly which this company holds as to the supply and manufacture of aluminium by the patents under their control; and although this is a meeting called mainly for an alteration of the articles of association in certain small particulars, I thought it would be advisable to give this information to the shareholders at this time. The position of the company was explained very fully at the last meeting which we held, and all the affairs of the company have been going on very prosperously since then. Now, as to the legal position, you are aware that we brought actions against persons and firms who had imported aluminium from America and Germany. I am happy to tell you that all those who disputed our monopoly have submitted to the injunctions granted, with the exception of one or two, who are about to submit. The principal firm against which we brought an action was that of Sir W. G. Armstrong, Mitchell & Co., Limited, of Newcastle-on-Tyne, and about a fortnight ago an injunction was granted in the Courts against them. The Government had before paid us royalties on aluminium, which they had brought away from us from America. Now I am happy to say that in the future none of the companies which manufacture aluminium in foreign countries will supply aluminium to this country. They are convinced that our monopoly is a good one, and that now we have the whole field before us, and the shareholders will in future derive the full benefit from their monopoly. We are the only people who manufacture aluminium in this country by the electrical process, and this is the only process which has been adopted and can be adopted for the manufacture of aluminium. In connection with this matter there was a firm called the Aluminium Supply Company, which had worked up a very good business as agents for the American Company, and that organisation we thought so valuable that we have allowed it to continue, and, in order that we may have the full benefit of it in the future, we have taken a half share in that company. Now, with regard to the

OTHER BRANCHES OF MANUFACTURE.

I might add to the information which I gave to the shareholders at our last meeting that at Greenock the works have been very much developed, and the manufacture of electrolytic carbons is very much required in this country, and the various people in other branches of electrolysis who are now developing large works for this purpose have decided to utilise the factory that we have at Greenock for the supply of electrolytic carbons for other purposes. This, I think, will be a very great branch of our work, and that we shall derive considerable profit from it, and also be able to reduce the cost of our own manufacture of carbons by carrying on the work on a larger scale.

CHEMICAL PRODUCTS.

At Larne we also have other branches of manufacture, which promise in the future to give us additional dividends—that is, in connection with the manufacture of alumina, sulphate of alumina, and other articles of that kind, which are used very much for different purposes. As you know, we have large undeveloped arrangements at present in connection with water-power. All these various electrical processes require water-power for their proper carrying out, and we have been approached by many of these firms with a view to assisting them by giving them facilities for carrying on their industries by means of water-power. This will lead in the future to the development of these water-powers. It is quite evident from the utilization of water-power in other countries that this is going to be a very great industry. Of course, our water-power depends principally upon the rainfall in this country, and our engineers have been able to convince us that from that source and the storage which we have at our command we can utilise water-power in this country quite as cheaply, if not more cheaply, than the water-power in America and elsewhere. But it has an additional advantage, because many of the water-powers that have been developed in foreign countries are very far away from the base of utilisation. That is not so in our case, because most of our water-powers are on the sea coast, and as soon as they are developed they will be immediately made useful. Now, I do not think I need tell you about the other branches of our industry, because I believe you are already very fully acquainted with them. The manufacture of aluminium is going on better than we expected, and

THE DEMAND IS INCREASING EVERY DAY,

and we are taking every requisite means to meet that demand. Now the real object of our meeting is to pass a resolution for altering the articles of association. The alterations you have before you, and I do not think it is necessary that I should make any special statement, as

far as they are concerned. The first one under the head (a) refers to the interest payable on calls in arrear. By an oversight the word "shall" has been inserted instead of the words "be liable to." That imposes upon the directors the obligation of making every shareholder who has not paid up his calls pay 10 per cent. interest after the date they were due. In future we only wish to have that power, but we do not desire to exercise it unless under very exceptional circumstances. The other alterations in the articles refer to minor details. I think it is quite apparent from the circular which was sent out what those are, so without further words I will move that the following resolution be accepted:—"That the articles of association be altered in manner following:—(a) By inserting in article 28, line 4, after the word 'shall,' the words 'be liable to,' and after the word 'thereof,' in line 7, the words 'but the directors may when they think fit remit altogether or in part any sum becoming payable for interest under this clause.' (b) By inserting at the end of article 30 the words 'there shall be paid to the company in respect of, and prior to, the registration of any transfer a fee of 2s. 6d.' (c) By striking out of Article 111 from and including the word 'the' in line 3 to and including the word 'up' in line 7."

Dr. A. A. Common seconded the resolution, which was then put and carried unanimously.

The Chairman: Gentlemen, that terminates the business of the meeting, but I may say that we have declared a further interim dividend of 7 per cent. on certain of the preference shares, and we shall continue to declare those dividends from time to time as we think advisable. The confirmatory meeting will be held in the usual course. It will be of a formal character only, but no doubt we shall have sufficient shareholders present to form a quorum on that occasion.

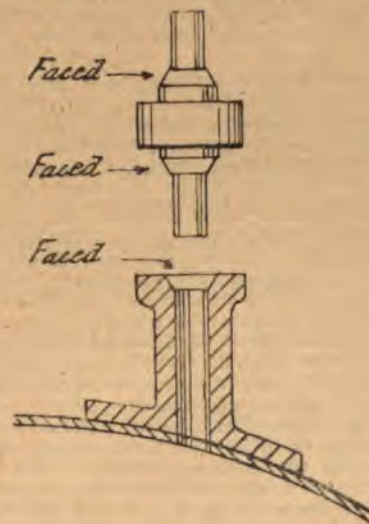
Correspondence.

* * We do not hold ourselves responsible for the opinions expressed by our correspondents.

TAR STILL EXPLOSIONS.

(To the Editor of the Chemical Trade Journal.)

SIR,—Below is a rough sketch of a safety-valve and test-hole combined, which I began to put on our tar-stills about nine months ago, and which has given every satisfaction. The seat is shown in section and the weight is not. Both are of cast-iron and rough, except the bearing faces, which are turned in lathe and ground into each other. The upper spindle of the weight serves as a handle, and a hole is provided



in the gangway to hold the weight when the man has occasion to lift it from its seat. The cost is only a few shillings, and the area and weight can be calculated so as to relieve at any desired pressure. Working with our tar, a 2-inch pipe reaching to 1 foot off the bottom of the still, as recommended in a recent number of the *Journal*, would be certain to choke, and, if it did act, would make a great mess.

Yours, &c.,

ROBT. HAMILTON, Manager.

Furnace Gases Co., Ltd., Shotts, N.B.

RE DISCLAIMER.

(To the Editor of the Chemical Trade Journal.)

SIR,—Your report of the visit of members of the Society of Chemical Industry to our works is substantially correct. The plant for rectifying sulphuric acid is constructed, and is solely working under the Company's own patents, viz.: Nos. 19,213, 1892; 2,476, 1893; 22,844, 1894.—Yours, &c.,

August 3rd, 1897.

IVAN LEVINSTEIN,
Managing Director,
Levinstein Ltd.

COMMERCIAL TREATIES AND AMMONIA SULPHATE.

(To the Editor of the Chemical Trade Journal.)

SIR,—The notices *re* Commercial Treaties to Germany and Belgium ought to furnish a good pabulum for the *Chemical Trade Journal*, to show how necessary it is that there should be a central body to protect the interests of sulphate of ammonia makers.

Last year the total exports were 127,029 tons, of which there went to Germany 24,187 tons, plus to Holland (bulk up the Rhine) 6,987 tons, say 28,000 tons to Germany, and 19,199 tons to Belgium, making a grand total of 47,000 tons, or 37%. At the time of the signature of the old treaties, now under notice, the British make was insignificant, but now there are close upon 200,000 tons made per annum.

The Continental production was also extremely small, but now both countries have large makes, mostly from coking. Germany is set down at 80,000 tons yearly.

As, no doubt, all articles will be reviewed during the negotiations, the case might arise that these two Governments might want to clap a duty on sulphate, with a view to protecting home production. In both countries the coal and iron masters are influential, and their idea would not be exactly to exclude sulphate of ammonia, but would be based on the speculation that makers here would have to pay the duty, since they have practically no chance of sending their salt elsewhere.

Free nitrate would assist the Continental Governments in pressing the matter forward, and producers on this side would require a body to look after their interests in the negotiations.

Yours, &c.,

E. GROSCHKE.

Trade Notes.

PERSONAL.—We learn that Dr. P. T. Austen, of Brooklyn, New York, has associated himself with the American Pegamoid Co., and that his address in future will be care of the Company, 11, Broadway, New York.

NITRATE STATISTICS.—The Permanent Nitrate Committee's statistical circular for August states:—"Total exports to Europe, July, 1,846,000 quintals; loading for Europe, August 1, 1,836,000 quintals. Imports—Europe, July, 59,540 tons; deliveries, Europe, July, 43,430 tons. Visible supply—Europe, August 1, stocks and afloat, 344,270 tons."

LOW FLASH OILS CONDEMNED.—Dr. H. R. Oswald, deputy coroner for Central London, held an inquest at Marylebone Coroner's Court, on Wednesday, respecting the death of Eliza Fanny Clark, aged 33, the wife of a cap presser. The woman was, her husband said, in the habit of unscrewing the top of "a sort of China" lamp and pouring oil into the reservoir while the wick remained alight, a practice against which he had cautioned her. While between one and two on Sunday morning she was thus filling the reservoir of the lamp in their sitting room, a muslin blouse that she wore somehow caught fire. He did not witness the occurrence but was attracted to his wife by her screams. He conveyed her to the Middlesex Hospital, where she expired twenty-four hours afterwards. Dr. Alford, the house surgeon, said that about a third of the body was superficially burned. The Coroner said the evidence did not clear up how exactly the woman caught fire. It was, however, a matter of common notoriety that many people bought inferior oils of a low and extremely dangerous flashing point, such as cheap oils we allowed to be imported from America, oils which Americans did not permit to be sold in their country. Such oils came to us, nevertheless, and to any lands in which the exporters could dump them down. The stuff was brought here because it was cheap, and notwithstanding that it had a low flashing point and easily exploded or became ignited. Our own oils were good oils, and had a high flashing point. It seemed strange that while the sale of the inferior low flash American oils was prevented in the United States, they should be allowed to be sold in the United Kingdom without let or hindrance. The jury returned a verdict of accidental death.

THE NATIONAL PHYSICAL LABORATORY.—The Treasury have appointed a small committee to consider and report upon the desirability of establishing a national physical laboratory for the testing and verification of instruments for physical investigation, for the construction and preservation of standards of measurement, and for the systematic determination of physical constants and numerical data useful for scientific and industrial purposes, and to report whether the work of such an institution, if established, could be associated with any testing or standardising work already performed wholly or partly at the public cost. The following will be the members of the committee: Lord Rayleigh (chairman), Sir Courtenay Boyle, Sir Andrew Noble, Sir John Wolfe Barry, Mr. W. C. Roberts-Austen, Mr. Robert Chalmers (of the Treasury), Mr. A. W. Rucker, Mr. Alexander Siemens, and Mr. T. E. Thorpe.

RUBBER IN WEST AFRICA.—Mr. Russell speaking recently on the prospects of the Gold Coast Colony said the rubber industry has become an important factor in the wealth of our West African colonies. The prosperity of the Gold Coast can be solely ascribed to the impetus of this particular industry; unfortunately, the native is an improvident creature, and many forests are more or less denuded of rubber trees owing to excessive and injudicious tapping. It is, in my opinion, necessary that some system of forestry should be adopted throughout the West African Colonies. A very considerable portion of the exports of rubber through Cape Coast during the last twelve months originated from French territory, and had we not had the benefit of this influx on the Gold Coast our exports would have shown a considerable decline on the previous twelve months. The Sefwi country (Gold Coast), at one time a large rubber-producing district, is now practically valueless, in fact, unless some measures are taken for the due protection of the rubber trade, the industry of the Gold Coast has a poor outlook. Mr. M. H. Hull, travelling commissioner—a most experienced and conscientious official—accompanied me during the principal portion of my trip. I understand he has compiled an exhaustive report in respect to Gold Coast rubber, which will doubtless tend to show the necessity of immediate action for protection.

Market Reports.

TAR AND AMMONIA PRODUCTS.

The tar products market is a holiday one. Prices all round are nominally the same, and there seems to be very little business doing in all sections. Benzols are quoted 2s. to 2s. 1d. for 90's and 50/90's. There are no changes in the values of carbolic acids, while naphthas are quietly steady at last quotations. There are prospects of better things in connection with anthracene, while there is no cause to apprehend that the present quietude will not disappear as the holiday month wanes.

Sulphate of ammonia continues to move fairly freely with a good inquiry for forward. Quotations are for the most part maintained, Beckton still standing at £7. 10s., the same applying to London outside makes. Liverpool value is now £7. 11s. 3d., Hull £7. 10s., and Leith £7. 8s. 9d. to £7. 10s., all prompt.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade there is still a continued activity in demand for export. Caustic soda has been moving more freely, and in consequence quotations for prompt delivery have been advanced for some markets. The prospect of trade in this article, however, for forward delivery, and the competition from increased output in the United States, does not favour the permanent establishment of a higher price. Current quotations, f.o.b. Liverpool, are as follows: 77%, £8. 15s.; 74%, £8. 70%, £7. 2s. 6d.; 60%, £6. 2s. 6d., nett, per ton. Alkali, 58%, unchanged—£3. 17s. 6d., bags, f.o.r. makers works, with some small resale lots offering slightly below this figure. Soda crystals and bicarbonate are firm in price, and in good request. Bleaching powder still in active demand for export, and price unchanged either for prompt or forward delivery. Saltcake quiet at 19s. to 20s., in bulk, f.o.r. Sulphur £4 12s. 6d. per ton. Sulphate of copper rather easier at £15. 15s., f.o.b. Borax and boracic acid are steady at last week's quotations, but business dull. Nitrate of soda remains at 7s. 6d. per cwt. Arsenic is in strong request, and price firm at £22. f.o.r. Garston, London, etc. Inquiry for potash, caustic and carbonate, continues good, but prices seem inclined to droop. Prussiate of potash firm at 53d. per lb. Cyanide at 10½d. per lb. Brown acetate of lime selling more freely at £4 15s. to £4 17s. 6d. c.i.f. White sugar of lead unchanged. All acetates and acetic acid quiet. Bichromate of soda 3¾d. Potash 4½d. per lb. Carbolic acids are steady in price with fair enquiry. Aniline oil and salt have an upward tendency. Sulphocyanide quiet. No indications of any substantial improvement are yet visible in the demand for miscellaneous chemicals.

REPORT ON MANURE MATERIAL.

The market continues very quiet, without any special feature. Quotations for mineral phosphate are unchanged. For United Kingdom there is very little doing. No fresh transactions are reported in River Plate bones, and the nearest value remains £3. 12s. 6d. for autumn shipment. East Indian bone meal is rather more firmly held, and although £3. 11s. 3d. would no doubt be accepted on spot, something more would have to be paid for shipment ahead. The efforts to combine for a further restriction of shipment of nitrate of soda during the current 12 months having been unsuccessful, the outlook for nitrate of soda is not at all encouraging. On spot, the value of ordinary quality is 7s. 4½d. per cwt., and that of fine 7s. 6d. per cwt. In the forward position there is very little interest, although there are sellers for spring delivery on the Continent at equal to 7s. 6d. per cwt.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron. Scotch warrants closed at 44s. 6d.; Middlesbro', 39s. 10½d. cash; and hematite, 47s. 2d. Copper quiet: Chili bars, G.O.B.'s and G.M.B.'s, closed at £47. 15s. to £48. cash, and £48. 1s. 3d. to £48. 6s. 3d. three months. Tin flat: Straits closed at £61. 5s. to £61. 15s. cash, and £61. 15s. to £62. 5s. three months; Australian, £62. 10s.; English ingots, £65. Lead firmer: Spanish, £12. 8s. 9d. to £12. 10s. English, £12. 12s. 6d. Silesian spelter, ordinary, £16. 17s. 6d. to £17. Nickel, 1s. 2½d. Antimony, £30. Quick-silver dull: First hands, £7. 5s.; second hands, £7. 2s. 6d. Copper shares quiet: Cape, 2½ to 2½; Copiapo, 2½ to 2½; Libiola, 2½ to 2½; Mason and Barry, 2½ to 3; Rio Tinto, 22½ to 22½; Tharsis, 5½ to 5½.

GLASGOW, WEDNESDAY.—Market strong and a good business. Scotch done at 44s. 6d., 44s. 5d., 44s. 6½d. and 44s. 6d. cash; also at 44s. 7½d., 44s. 7d., and 44s. 8½d. one month; buyers, 44s. 6d. cash; sellers, ½d. dearer. Cleveland done at 40s. 0½d., 40s., and 40s. 0½d. one month; buyers, 39s. 10½d. cash; sellers, 39s. 11d. Cumberland hematite done at 47s. 4d. and 47s. 5d. one month; buyers, 47s. 2d. cash; sellers, 47s. 2½d. Middlesbrough hematite, buyers, 48s. 6½d. cash; sellers, 48s. 9½d.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is firm, but is moving more freely. Over 100 tons of hard and soft oils have been done on spot at £18. 15s. and £17. 15s. respectively. Lags stands at £20 spot and £19. 15s. ex quay. Olive though firm and inclined to advance in price is inactive. Linseed is decidedly firmer, Liverpool makes in export casks now standing at 17s. to 17s. 6d. cwt., according to quality. Cottonseed is scarce, prices being firm at 16s. to 16s. 6d. cwt. for Liverpool refined. Castor oil is very steady, good seconds Calcutta now being firmly held for 3½d. to 3½d. lb.; first pressure French and Madras 3½d. per lb. There is only a small amount of business doing in tallow, but prices keep steady. Resin is moving fairly well, all grades being firm as regards price. Spirits of turpentine are keeping steady at 21s. 6d. per cwt. Petroleum presents nothing new, prices remaining at 5½d. to 7d. for American and 5¼d. per gallon for Russian refined.

CAKES.—With the exception of a slight weakening tendency in the early part of the week, owing to the arrival of West Americans, there has been no change. The market closes firm in all sections, Egyptians being scarce.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The position of linseed oil at the close of market to-day is very firm, showing an advance upon rates a week ago of 10s. per ton. It is said that 400 tons is being brought upon the market out of warehouse. Cottonseed oil continues but little altered, about the prices current a week ago. The imports to date during the year against the same time a year ago have been—Linseed, 354,780 qrs., against 429,497 qrs.; rapeseed, 55,489 qrs., against 60,959 qrs.; cottonseed, 120,676 tons, against 95,847 tons; oilcake, 6,945 tons, against 8,044 tons; olive oil, 3,238 tons, against 4,101 tons. The holiday interval does not appear to have had any material effect upon the situation and prices. Linseed oil is very firm, spot sold 15s. per cwt., naked, last four months, 15s. 6d. paid, and first four months 15s. 9d.; boiled and refined from £1. to £1. 10s. per ton extra. Refined cottonseed oil very firm: Spot, 13s. 10½d. per cwt. naked; November-April, 14s. asked. Filtered is quoted about £1. per ton extra. Crude oil is quoted

12s 7½d., and has been paid. Casks £1., and barrels £1. 10s. per ton extra. Olive oil continues unchanged at previous rates. Castor oil quoted from 3½d. per lb. Spirits of turpentine, 21s. 6d. There are further consignments of Italian olive soaps coming forward, which is still quoted from £15. for 60/62% fatty acids Oleines unchanged, £15. 10s. to £18. per ton for redistilled. Cod oils, £16. to £18. per ton.

CAKES.—Linseed cakes are dearer; 95% pure, £6. 12s. 6d. Oil-cakes, £5. 12s. 6d. to £5. 15s. Russians, £6. 7s. 6d. to £6. 10s. Americans, £5. 17s. 6d. Cotton cakes firmer in price, but limited demand; best makes, £3. 16s. 8d. to £3. 17s. 6d.; seconds, £3. 13s. 9d., spot, best makes: November-April, £3. 17s. 6d. Rape cakes quiet: Black Sea, £3. 8s. 9d.

PAINTS.—After a temporary lull in the trade, business is again looking up; prices unchanged.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Since the resumption of business after the holidays the feeling has been one of comparative activity, partly due, no doubt, to the mere making up of lee-way, but also attributable in some degree to a slightly healthier condition of things in the general chemicals market. The hot weather is having very palpable effect in the scarcity of the stocks more directly affected. The advance in lead products still continues, and bleaching powder is more inquired after. Borax and sulphate of copper remain easy, but with no further quotable declension. Heavy chemicals generally are unchanged in price, and the others also remain at the figures of last week. Sulphate of ammonia keeps surprisingly stationary for an article of so volatile a reputation, and £7. 10s. prompt f.o.b. Leith is still about the figure. Mineral oils and paraffins are under the immediate attention of the Scotch makers for revision against the new season, and it is expected that burning oil and wax will be slightly lowered from the prices nominally given below. The others will not be affected.

Chief prices current are:—Soda crystals, £2. 12s. 6d., nett, Tyne, soda ash, 48/62°, £4. 2s. 6d. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £5. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8., 70/72° £7. 2s. 6d., 60/62° £6. 2s. 6d., and cream 60/62° £6., all nett, Liverpool; bleaching powder, 35/37°, £6. 10s. nett, Tyne; saltcake, 19s. to 20s.; borax, English, refined, £14. 15s. and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 3¼d. to 4d. less 5%, any port; nitrate of soda, 7s. 6d. to 7s. 9d.; sulphate of ammonia, £7. 10s., prompt, f.o.b. Leith; sal ammoniac, first and second white, £33. and £31. nett any port; sulphate of copper £15. 15s., less 5% Liverpool; paraffin scale, hard, 1¼d. to 1½d., and soft, 1½d. per lb.; paraffin wax, 120° semi-refined, 1¼d. to 2d. per lb.; paraffin spirit (naphtha), 6½d. per gallon; paraffin oil (burning), No. 1, 6¼d., and crystal, 6½d., at Glasgow and other big centres, for Scotch buyers (English sales ½d. to ¾d. lower); ditto (lubricating) 865° £5. to £5. 5s., 885° £5. 15s. to £6. 5s., and 890/895° £6. 10s. to £7. Week's imports of sugar at Greenock were 10,233 bags beet unrefined, and 100 cases beet refined.

TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals continue quiet, and prices generally unchanged. Soda crystals, £2. 12s. 6d. per ton, gross weight, locally, caustic, 76/77%, £9. per ton; 70%, £7. 10s. per ton. Sulphur firm at £4. 15s. to £5. per ton.

Bleaching powder, softs, £6. 10s. per ton, nett; hards, £6. 15s. per ton, nett; caustic soda, 76/77%, £9. per ton, nett; do., 70%, £7. 10s. per ton, nett; recovered sulphur, 2 cwt. bags, £5. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. 6d. per ton, nett; do., 52%, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett weight; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett weight; blanc fixe, £7. 5s. per ton, nett weight; chloride of barium, refined crystals, £6. 15s. per ton, nett weight; do., 90/95% crude calcined, £6. per ton nett weight; sulphide of barium,

" 100 800 L. Norman & Co. France, 400 400 " J. Parsons Canada, 500 500 Trier, Meyer, & Co. " 250 250 " Fellows, " 2,000 2,000 Morton, & Co. U. States, 150 867 Ohlenschlager Bns. " 2,000 2,000 Beresford & Co. " 50 290 S. E. Railway Germany, 100 100 M. D. Co. Canada, 500 500 C. S. Lovell " 500 500 Seaward Bns. & Co. " 4,150 4,150 R. G. Hall & Co. " 500 500 Thames S. T. & L. Co., Ltd. " 1,000 1,000 G. Clark & Son U. States, 500 500 " Page, Son, & East " 50 300 Trier, Meyer, & Co. " 250 250 R. G. Hall & Co. " 3,189 13,655 " Phillips & Graves Germany, £19 Beck & Pollitzer Canada, 34 J. Barber & Co. Belgium, 184 T. H. Lee Germany, 500 B. & F. Wf. Co. France, 75 G. Rahn & Co. U. States, 62 Armour & Co. Holland, 100 J. Owen France, 230 Vokins & Co. Holland, 290 M. H. Voss Lamp Black— U. States, 100 brls. M. Ashby, Ltd. Magnesia— Belgium, 23 cs. Hore & Scrivener Manganese Ore— China, 110 t. Fellows, Morton, & Co. Japan, 25 J. Swire & Sons Manure— E. Indies, 320 t. Fox, Roy, & Co. " 200 Dundee, Perth, & London S. Co. Germany, 6 J. Steiger Belgium, 50 Chemical Works Co. Holland, 31 J. W. Cook & Co. Germany, 26 E. Groschke Methyl Alcohol— Germany, 5 dms. T. Jones & Co. Mica— U. States, £60 C. F. Gerhardt France, 73 L. & I. D. Jt. Co. E. Indies, 256 W. M. Smith & Sons Ochre— Holland, 29 3 cs. Phillips & Graves Phosphate Rock— Belgium, 215 t. Lawes Chemical Manure Co. Pitch— Sweden, 260 brls. J. E. Powell U. States, 33 T. Simpson Plumbago— Germany, 12 cs. 1 cs. B. Gallaway Ceylon, 160 L. & I. D. Jt. Co. " 753 J. Thredder, Son, & Co. " 243 Williams, Torry, & Co. " 289 Doultou & Co. " 142 Elkan & Co. " 81 G. R. Haller Potassium Bicarbonate— Holland, 9 cs. A. & M. Zimmermann Potassium Carbonate— Germany, 40 c. R. W. Greeff & Co. " 426 Gas Light & Coke Co. Canada, 76 Charles & Fox France, 80 J. A. Reid Potassium Permanganate— Holland, 110 cs. Phillips & Graves Pyrites— Spain, 2,816 t. C. Tennant, Sons, & Co. Rosin— U. States, 2,300 brls. Moore & Hole Rosin Oil— France, 250 brls. C. Price & Co. Saltpetre— Holland, 20 cs. Petri Bns. E. Indies, 3,029 bgs. Lucas & Spencer's Wf. Soda— Holland, 100 c. R. W. Greeff & Co.	Sodium Acetate— Belgium, 23 cs. H. Lorenz Potassium Prussiate— Belgium, 40 cs. Blagden, Waugh, & Co. Starch— Germany, 1,250 cs. Horne & Co. U. States, 960 bgs. Bertel Food Co. Holland, 1,416 cs. Little & Johnston Belgium, 240 T. H. Lee Holland, 20 Becker & Wagner France, 60 Phillips & Graves Germany, 80 F. Claydon & Co. Belgium, 220 C. Tennant, Sons, & Co. " 200 Hore & Scrivener " 60 bxs. Leach & Co. " 260 cs. F. Claydon & Co. France, 740 50 bgs. W. E. Cole Holland, 205 T. H. Lee U. States, 1,040 bgs. Ohlenschlager Bns. " 100 R. G. Hall & Co. U. States, 400 L. & I. D. Jt. Co. " 100 cs. C. Tennant, Sons, & Co. Belgium, 80 cs. J. Harrison " 100 Union L. Co. Holland, 49 Butler's Wf., Ltd. " 20 C. Tennant, Sons, & Co. Stearine— U. States, 173 bgs. H. Hill & Sons Holland, 3 cs. Poth, Hille & Co. " 317 bls. Palmer & Co. U. States, 22 cs. Wilsons & Furness Belgium, 188 bgs. H. Hill & Sons Sulphur— Italy, 12 t. Bailey & Leatham, Ltd. Talc— France, £65 Blackwell & Co. E. Indies, 40 Carter, Paterson, & Co. " 453 A. B. Curtis & Co. Tartaric Acid— France, 4 pks. W. C. Facon & Co. Germany, 4 B. & F. Wf. Co. Holland, 12 4 cs. " " " 17 Kirkpatrick & Co. Ultramarine— Germany, 24 cs. T. Hamilton & Co. Holland, 1 W. H. Carey & Sons Varnish— U. States, 20 pks. C. Ward " 6 Dawson Bns. " 18 Lusham & Moore " 66 Taylor Bns. Canada, 13 L. & I. D. Jt. Co. Belgium, 17 Stobbs, Wilson & Co. Waste Salt— Germany, 250 bgs. R. W. Greeff & Co. White Lead— Holland, 3 cs. J. Owen Belgium, 40 T. & W. Farmiloe, Ltd. " 100 T. H. Lee " 33 brls. J. W. Cook & Co. Germany, 74 cs. D. Storer & Sons " 8 Taylor Bns. " 25 H. B. Aldem & Co. Belgium, 31 Burrell & Co. Germany, 20 Hubbuck & Co. " 1 Pickford & Co. Wood Pulp— U. States, 799 pks. E. J. & W. Goldsmith Germany, 612 W. G. Taylor & Co. Sweden, 303 Christophersen, Andrews, & Co. " 108 Norway, 80 W. G. Taylor & Co. Germany, 772 Schenker & Co. Holland, 52 C. S. Lovell " 1,529 E. J. & W. Goldsmith Zinc Oxide— Holland, 50 brls. Petri Bns. " 50 50 cs. M. Ashby, Ltd. Germany, 140 Soundy & Sons Holland, 500 60 cs. Prprs. Dowgate Dk. U. States, 100 brls. M. Ashby, Ltd. Holland, 4 cs. J. Owen " 4 Brit. Anti-Fouling Co.	Borate of Lime— New York, 1,609 sks. Balfour Williamson Pac. Borax & R. C. Wks. " 2,138 " " Borax— Hamburg, 101 bgs. Browne, Geveke & Co. Castor Oil— Genoa, 10 cs. " " Chemicals (otherwise undescribed) Boston, 435 brls. Hodgson & Simpson Cobalt Oxide— Rouen, 6 cs. Co-op W'sale Society, Ltd. Colours— Hamburg, 3 cs. " " Rotterdam, 9 pks. " " Cottonseed Oil— New York, 200 brls. " " Cream of Tartar— Bordeaux, 22 cs. " " Dyestuffs— Aniline Salts Rotterdam, 4 cs. " " Anatto Rotterdam, 2 bskts. " " Argols Lisbon, 35 cs. " " Cochineal Gd. Canary, 18 bgs. Canary Islands Trading Co. " 8 Swanton & Co. " 24 K. Henderson Teneriffe, Gambler Singapore, 1,998 bls. " " Orchella Lisbon, 221 bgs. " " Saffron Valencia, 1 cs. " " Shumac Palermo, 250 bgs. " " Valonia Gythion, 273 bgs. Papayanni & Jeremias " 1,475 L. J. Vizunaras & Co. " 2,600 " " Smayna, 128 t. Barry Bns. " 128 30 bgs. " " " 2,861 ktl. G. Essayan & Co. Patras, 1,961 bgs. Papayanni Bns. Farina— Fiume, 150 bgs. " " Trieste, 100 " " Hamburg, 440 H. Tyrer & Co. Glucose— New York, 100 brls. T. M. Duche & Sons Boston, 50 " " " 700 " " Glue— Fiume, 100 bgs. " " Rouen, 5 91 cs. 26 bls. Co-op W'sale Society, Ltd. Boston, 200 " " Rotterdam, 200 " " Lamp Black—
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Oxalic Acid — Stettin, 25 cks.		
Paraffin Scale — New York, 521 brls.		
Phosphate — Rotterdam, 10 cks.		
Pitch — Hamburg, 66 cks. Antwerp, 10 Rotterdam, 13		
Potash — Rouen, 9 cks. Rotterdam, 29		
Pyrites — Huelva, 800 t.	Stott, Coker, & Co.	
Sodium Naphionate — Rotterdam, 8 cks.		
Starch — New York, 488 bgs. Hamburg, 25 cks. Rotterdam, 210	236 cs. 20	
Stearine — Rotterdam, 18 bls.		
Tar Waste — Rotterdam, 2 cks.		
Tartar — Rotterdam, 2 cks.		
Tartaric Acid — Rotterdam, 15 cks.		
Waste Salt — Hamburg, qty.		
White Lead — Rotterdam, 6 cks.		
Wood Pulp — Skien, 2,191 bls. Hamburg, 95 New York, 300 bbls. Montreal, 360 rolls Norfolk, 150 Geffe, 8,100 Gothenburg, 2,480	Stott, Coker, & Co. "	
Zinc Ashes — Stettin, 53 cks.		
Zinc Oxide — Antwerp, 40 brls. Rotterdam, 30		
Zinc White — Rotterdam, 5 cks.		

HULL.

Week ending July 24th.

Acetic Acid — Rotterdam, 9 blns.	W. & C. L. Ringrose	
Albumen — Libau, 10 cs. Riga, 15	Bailey & Leatham, Ld. Wilson, Sons, & Co., Ld.	
Alum — Riga, 66 cks. Hamburg, 2	Wilson, Sons, & Co., Ld. "	
Antimony — Dunkirk, 3 cks.	Wilson, Sons, & Co., Ld.	
Barytes — Bremen, 26 cks. Antwerp, 42 Riga, 100	S. Tudor & Co. A. Sanderson & Co. Wilson, Sons, & Co., Ld.	
Castor Oil — Antwerp, 10 cks.	Bailey & Leatham, Ld.	
Chemicals (otherwise undescrbed) New York, 4 brls. Hamburg, 26 pks. Stettin, 1 ck. Dunkirk, 24 Antwerp, 18 100 pks.	Wilson, Sons, & Co., Ld. "	
Cod Oil — Bergen, 6 brls.	Wilson, Sons, & Co., Ld.	
Colours — Rotterdam, 14 brls. Antwerp, 80 pks. Riga, 23 cs. Rotterdam, 120 cks. Ghent, 1 cs. 2 bxs. 44 pks.	W. & C. L. Ringrose Wilson, Sons, & Co., Ld. Hutchinson & Son	
Cottonseed Oil — New York, 100 brls.	Wilson, Sons, & Co., Ld.	

Cryolith — Amsterdam, 1 ck.	Hutchinson & Son	
Dyestuffs — Alizarine Rotterdam, 6 cs. 14 brls. Indigo Rotterdam, 10 cts. Madder Rotterdam, 2 cks.	W. & C. L. Ringrose W. & C. L. Ringrose Hutchinson & Son	
Farina — Stettin, 81 bgs. Dunkirk, 50	Wilson, Sons, & Co., Ld.	
Glucose — New York, 100 brls. Rotterdam, 60 bgs.	Hutchinson & Son	
Glue — Rouen, 12 cks. Stettin, 1 Dunkirk, 20 New York, 268 bgs.	Rawson & Robinson Wilson, Sons, & Co., Ld. Wilson, Sons, & Co., Ld.	
Linseed Oil — Amsterdam, 269 bgs.	Hutchinson & Son	
Lithopone — Rotterdam, 20 cks.	W. & C. L. Ringrose	
Ochre — Rouen, 38 cks.	Rawson & Robinson	
Phosphate — Ghent, 80 t. Antwerp, 20 bgs.	Wilson, Sons, & Co., Ld.	
Pitch — Amsterdam, 13 cks.	W. & C. L. Ringrose	
Potash — Rotterdam, 20 cks. Antwerp, 61	Hutchinson & Son Wilson, Sons, & Co., Ld.	
Rcsin — Savannah, 175 brls. Bordeaux, 11 cks.	Rawson & Robinson	
Roain Oil — New York, 10 brls.	Wilson, Sons, & Co., Ld.	
Saltpetre — Hamburg, 10 kgs. Antwerp, 135 bgs.	Wilson, Sons, & Co., Ld. "	
Soda — Antwerp, 100 bgs.		
Starch — Bremen, 243 cs. Ghent, 269 Rotterdam, 60 Antwerp, 260 Ghent, 88	Veltmann & Co. Wilson, Sons, & Co., Ld. Hutchinson & Son Wilson, Sons, & Co., Ld. Hutchinson & Son	
Tallow — Dunkirk, 149 cks.	Wilson, Sons, & Co., Ld.	
Tar — Uleaborg, 1,400 brls.	J. Good & Sons	
Tartar — Bordeaux, 1 ck.	Rawson & Robinson	
Tartaric Acid — Rotterdam, 10 cks. 3	Hutchinson & Son W. & C. L. Ringrose	
Treacle — New York, 1,040 brls.	Wilson, Sons, & Co., Ld.	
Turpentine — Libau, 53 brls.	J. L. Seaton & Co.	
White Lead — Amsterdam, 6 cks. Antwerp, 37 Rotterdam, 19	Hutchinson & Son Bailey & Leatham, Ld. Hutchinson & Son	
Wolfram — Hamburg, 2 cs.	Wilson, Sons, & Co., Ld.	

Wood Pulp — Norrköping, 60 bls.	H. Biggs, Sons, & Co. Christiania, 280 bls.	Wilson, Sons, & Co., Ld.
Gothenburg, 626 Drontheim, 960	108 bbls. "	"
Zinc White — Rotterdam, 10 cks.	Hutchinson & Son	

GLASGOW.

Week ending July 29th.

Alum — Rotterdam, 100 bgs.	J. Rankine & Son	
Aluminium — Rotterdam, 4 cs.	J. Rankine & Son	
Ammonium Sulphate — Rotterdam, 28 cks.	J. Rankine & Son	
Asbestos — Genoa, 101 pks.		
Barium Chloride — Rotterdam, 4 cks.		
Barium Sulphate — Antwerp, 400 bgs.		
Barytes — Rotterdam, 7 pks.		
Beta-Naphthol — Rotterdam, 1 brl.	J. Rankine & Son	
Castor Oil — Leghorn, 26 cs. Antwerp, 4 cks.		
Cod Oil — Hamburg, 1,925 cs.		
Colours — Rotterdam, 5 cks. 2 bxs. Hamburg, 2 cs. Rotterdam, 15 pks.	J. Rankine & Son	
Dyestuffs — Alizarine Rotterdam, 13 cks. 21 brls.	J. Rankine & Son	
Aniline Rotterdam, 7 bxs. 4 bls.	J. Rankine & Son	
Madder Rotterdam, 3 cks.		
Shumac Palermo, 1,470 bgs.	100 bls.	
Farina — Delfsyzhl, 200 bgs.	J. Rankine & Son	
Glucose — Philadelphia, 100 brls. New York, 50		
Glue — Rouen, 33 cks. Rotterdam, 50 bgs. Fiume, 100	10 cs.	
Gypsum — Rouen, 400 bgs.		
Mineral White — Genoa, 150 bgs.		
Ochre — Rouen, 204 cks.		
Oxalic Acid — Rotterdam, 6 cks.		
Paint — Genoa, 17 cs.		
Plumbago — Genoa, 380 bgs.	8 brls.	
Potash — Rotterdam, 10 cks.	J. Rankine & Son	
Hamburg, 13 Rouen, 9		
Pumice Stone — Messina, 75 bgs.	15 brls.	
Pyrites — Huelva, 1,593 t.	Tharsis Co.	
Saltpetre — Hamburg, 34 cks.		
Soap — Fiume, 62 cs. Rouen, 4		
Starch — New York, 200 bgs. Rotterdam, 6 cts.	J. Rankine & Son	
Fiume, 20 bgs.	Wm. Stirling & Son	
" 280 Amsterdam, 40 cs.		

Stearine — Amsterdam, 78 bgs.	J. Rankine & Son	
Sulphur — Catania, 41 cks.	89 brls.	
Tallow — New York, 75 tcs.		
Tartar — Algiers, 84 bgs.		
Tartaric Acid — Rotterdam, 5 cks.	J. Rankine & Son	
Treacle — Philadelphia, 1,000 brls.	Waddell & Bryson	
" 200		
Ultramarine — Antwerp, 16 cs.		
Varnish — New York, 9 brls.	5 cs.	
White Lead — Rotterdam, 102 cks.	J. Rankine & Son	
" 62		
Wood Pulp — Abus, 1,050 t. Christiania, 1,882 bls.	Clyde Paper Mills 20 cs.	
Zinc Oxide — New York, 100 brls. Antwerp, 25 cks.		
Zinc White — Rotterdam, 50 cks.	J. Rankine & Son	

TYNE.

Week ending July 24th.

Acids — Hamburg, 2 cs.	Tyne S. S. Co.	
Alum Earth — Hamburg, 28 cks.	Tyne S. S. Co.	
Barium Chlorate — Rotterdam, 350 bgs.	Tyne S. S. Co.	
Barytes — Rotterdam, 402 bgs. Antwerp, 150	Tyne S. S. Co. "	
Cod Oil — Drontheim, 5 brls.		
Colours — Rotterdam, 1 brl. Antwerp, 3 cks.	Tyne S. S. Co. "	
Gil cose — Rotterdam, 10 cks.	Tyne S. S. Co.	
Glue — Hamburg, 20 bgs.	Tyne S. S. Co.	
Limestone — Antwerp, 1 crte.	Tyne S. S. Co.	
Linseed Oil — Amsterdam, 10 cks.	Wm. Swanston & Sons	
Phosphate — Antwerp, 340 bgs.	Tyne S. S. Co.	
Soap — Rotterdam, 22 cs.	Tyne S. S. Co.	
Tartaric Acid — Rotterdam, 6 cks.	Tyne S. S. Co.	
Ultramarine — Rotterdam, 1 cs.	Tyne S. S. Co.	

GOOLE.

Week ending July 21st.

Alizarine — Rotterdam, 103 cks.	1 cs.	
Aniline — Hamburg, 2 cs.		
Antimony — Boulogne, 3 cks.		
Caoutchouc — Boulogne, 4 cks.	1 cs.	
Colours — Rotterdam, 4 cks.		
Dyestuffs (otherwise undescrbed) Rotterdam, 389 cks. Boulogne, 2 6 22 pks.	75 cs.	
Farina — Harlingen, 50 bgs. Delfsyzhl, 871		
Glucose — Hamburg, 20 cks.		
Lead Acetate — Hamburg, 18 cks.		
Logwood — Yucatan, 539		

17 cks.	Starch— Rotterdam, 10 cs.	GRIMSBY. Week ending July 24th.	Chemicals (otherwise undescribed) Hamburg, 38 cs.
4 cs.	Stearine— Rotterdam, 10 bgs.	Albumen— Hamburg, 11 cks.	Colours— Hamburg, 11 cks. 18 pks.
44 dms.	Tartaric Acid— Rotterdam, 4 cks.	Aniline— Antwerp, 2 cks. 29 pks.	Hamburg, 10
100 bgs.	Waste Salt— Hamburg, 330 cks.	Barytes— Rotterdam, 134 bgs.	Antwerp, 8 51
Silicate— 1 ck.	Wood Pulp— Hamburg, 180 pks.	Caoutchouc— Hamburg, 2 cs.	Glue— Hamburg, 5 cks.
			Soap— Malmo, 1 cs.

EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON. Week ending July 28th.		Naphtalene		Sulphuric Acid—		Chemicals (otherwise undescribed)	
10 t. 1 c.	£76	Cologne, 6 cks.	£51	Durban, 16 dms	£18	Valparaiso, 1 15 1 31	
(Liquid)—		Rotterdam, 10 cs.	10	Delagoa Bay, 15 cs.	10	B. Ayres, 5 8 88	
22 dms	£95	Hamburg, 12 1,049 bgs.	356	E. London, 2	16	Antwerp, 7 17 158	
Carbonate—		Pitch		Superphosphate of Lime—		Ghent, 18 14	
160 kgs.	£180	Hobart, 12 pks.	£6	Dunedin, 50 t.	£138	Galatz, 11 11	
2 t. 3 c.	55	St Michael's, 6 brls.	6	Auckland, 50	150	Rotterdam, 4 3 1 73	
5 cks.	14	Alexandria, 100	39	Superphosphates—		Calcium Phosphide—	
Chloride—		Prussian Blue		Riga, 400 t.	£800	Valparaiso, 2 c. 1 q. £24	
15 cks.	£125	Baltimore, 3 cks.	£19	Auckland, 50	150	Carbolic Acid—	
1 t.	19	Pyridine Bases		Tartaric Acid—		Montreal, 12 c. 2 q. £44	
Sulphate—		Cologne, 29 dms.	£553	Brisbane, 2 c.	£12	Hamburg, 15 t. 1 785	
130 t.	£1,040	Hamburg, 2	83	Wellington, 7	40	Rouen, 89 10 86	
250	1,990	Sydney, 5 cs.	3	Sydney, 1 t	118	Caustic Potash—	
40 kgs.	£12	Tar		St. Petersburg, 13	82	Havana, 1 c. £6	
3 cs.	11	Durban, 6 brls. 70 dms.	£15	B. Ayres, 1	7	Baltimore, 1 t. 5 34	
Acid—		Karachi, 5 cks.	5	Yokohama, 1 5		Caustic Soda—	
14 tins	£20	Melbourne, 3	10			Alexandria, 30 dms.	
25 cks.	111	Newfairwater, 150	75			Algiers, 19	
Acid Gas—		Hamburg, 144	65			Bahia, 60	
34 tubes	£13	Sydney, 20 200	60			Baltimore, 70 bxs.	
6 cs.	29	Calcutta, 20	14			Barcelona, 100 180 cks.	
Soda—		Coal Products (otherwise undes.)—				Bilbao, 18 22	
5 t. 4 c.	£106	Brussels, 1 ck.	£12	Acetic Acid—		Bombay, 5	
3 16	85	Durban, 20 rmls.	12	Lisbon, 19 c. 3 q.	£7	Boston, 50	
8 8	60	Copper Sulphate—		Alum—		B. Ayres, 40	
3 55	55	E. London, 6 c.	£6	Sydney, 3 t.	1 q. £15	Christiania, 5	
5 36	36	Fremantle, 3 t 18	53	Lisbon, 5 3 c.	25	Coronel, 25	
(otherwise undescribed)		Hamburg, 7 4	118	Havana, 8 1 2 25		Fairwater, 98	
3 pks.	£13	Cream of Tartar—		Bourgas, 9 3 2 42		Fiume, 15	
6 2 cs.	60	Brisbane, 5 cs.	£22	Rio de Janeiro, 19 3 7		Genoa, 200	
6 52	52	Auckland, 10 kgs.	45	Cadiz, 2 10		Hamburg, 102	
37 119	119	Adelaide, 10 c.	40	Bilbao, 5 10 2 17		Havana, 65	
26 10 kgs 23 dms.	260	Hobart, 5	26	Galatz, 5 29		Hong Kong, 35	
27 25 34 cks. 585	585	Cape Town, 2	10	Alum Cake—		Honolulu, 20	
id—		Disinfectants—		Bilbao, 5 t. 4 c. 3 q.	£17	Jaffa, 110	
burg, 2 t. 15 c. 4 cks.	£457	Melbourne, 14 cs.	£36	Aluminous Cake—		Konig-berg, 18	
eth, 1 8	8	Penang, 100 dms. 5 cks.	77	Melbourne, 6 t. 3 c. 2 q.	19	Leghorn, 35	
2 13	13	Colombo, 53	44	Calcutta, 24 16	92	Lisbon, 110	
12 81	81	Sydney, 225 pks.	24	Ammonium Carbonate		Malaga, 55	
10 60	60	Pt. Elizabeth, 40	18	Barcelona, 1 t.	£23	Marseilles, 107	
2 12	12	Manure—		Genoa, 2 10 c.	20	Mauritius, 20	
6 cs. 34	34	Riga, 151 t. 16 c.	£315	Montreal, 1	29	Melbourne, 60	
2 13	13	Bahadoes, 10	101	Christiania, 1	30	Montreal, 50	
1 7	7	Rouen, 39 15	240	Antwerp, 10	15	Nagasaki, 200	
en, 2 kgs. 13	13	Potassium Bichromate—		Marseilles, 1 14	31	Naples, 62	
ucts—		Beyrout, 1 ck.	£45	Ammonium Chloride—		Oporto, 15	
ne 6 cks.	£70	Potassium Chlorate—		Genoa, 3 t. 11 c.	£67	Para, 30	
20 233	233	Demerara, 5 c.	£9	Galatz, 1	37	Pernambuco, 260	
1 34	34	Potassium Cyanide—		Ammonium Sulphate—		Philadelphia, 50	
burg, 24 cs.	1,070	Pt. Elizabeth, 7 t.	£539	Santos, 20 t.	£145	Pimental, 10	
2 dms.	£70	Auckland, 2	180	Demerara, 5 16 c. 3 q.	45	Progresso, 30	
Salts		Potassium Prussiate—		Teneriffe, 5	40	Rangoon, 38	
17 cks.	£150	Genoa, 4 cks.	£50	Las Palmas, 29	216	Rotterdam, 27	
26 250	250	Saltpetre—		Tour'y Char'nte, 248	6 1,850	Rouen, 70	
12 brls.	60	Auckland, 1 t.	£21	Bilbao, 19 13 1 155		Samarang, 200	
cene		Newport News, 13 15	241	Leghorn, 19 17 3 155		San Francisco, 50	
59 cks.	£223	Durban, 15	16	Cheribon, 77	740	San Juan, 28	
230 939	939	Hobart, 1 10	21	Charente, 250	267	Savanilla, 50	
20 crts.	£29	Montreal, 12 2	224	Valencia, 51 10	614	Seville, 200	
31 dms.	£53	Sheep Dip—		Barium Chlorate—		Stettin, 30	
100 cks.	£79	San Francisco, 5 t. 19 c.	£395	Rotterdam, 10 c	£33	Sydney, 20	
1,001 488	488	Pt. Elizabeth, 75 cs.	600 dms 123	Bleaching Powder—		Tarragona, 62	
News, 500 brls	300	Timaru, 2	5	Baltimore, 37 cks 70 bxs		Torrecon, 168	
		Launceston, 1 11	55	Boston, 303		Vigo, 30	
		B. Ayres, 35 cs. 53 11	1,880	B. Ayres, 10 dms.		Yokohama, 290	
		Durban, 1 ck.	12 5	Corfu, 20		Chemicals (otherwise undes.)—	
		Soda—		Montreal, 10		Bremen, 12 c. £17	
		Brisbane, 1 t.	£6	Newport News, 19		Ghent, 10 15	
		Soda Crystals—		New York, 101		Hamburg, 10 14	
		Zanzibar, 1 t. 5 c.	£5	Rouen, 220		Philadelphia, 20 cks. 420	
		Sodium B carbonate—		St. John's, 17		Montreal, 2 cs. 1 t. 18 74	
		Hobart, 1 t.	£7	Venice, 4		Bourgas, 19 30	
		Sodium Carbonate—		Boracic Acid—		Constantinople, 1 31	
		Fremantle, 12 c.	£8	Oporto, 9 c. 3 q. £14		China Clay—	
		Sodium Sulphate—		Yokohama, 2 t.	50	Bombay, 100 cks.	
		Ghent, 50 t.	£50	Borax—		Boston, 510	
		Sulphur—		Sydney, 1 t.	£17	Calcutta, 140	
		B. Ayres, 2 t.	£26	Chihuahua, 1 2 c	7	New York, 200	
		Durban, 10 c.	5	St. John, N.B., 1 8 1 q.	23	Naples, 40	
				Hamburg, 2 10	40	Coal Products—	
				Stettin, 3 16	62	Aniline Salts	
				Oporto, 9 3 8	8	Genoa, 10 c.	
				Yokohama, 2 19 2 48	48		

Anthracene			Phosphorus—			Rufisque			Sodium Hyposulphite—		
Rotterdam,	21 cks.		Rosario,	12 c.	£110	St. John's,	81	100	San Francisco,	435 pks.	
Creosote Oil			Havana,		36	Salonica,	50		Sodium Sulphate—		
Copenhagen,	30 brls.		Tampico,	5	35	San Juan,	50		Oporto,	4 cks.	
Pitch			Shanghai,	21 t.	280	Shanghai,	2,100	8,677 pks.	Rotterdam,	18	
B. Ayres,	2 cks.		Hiogo,	3	10	Sierra Leone,	40		Starch—		
Cette,	535 t.		Potashes—			Teneriffe,	100		Lisbon,	16 bgs.	
Rouen,	11		B. Ayres,	1 t.	6 c.	Trinidad,	750		Oporto,	20	
Tar			Constantinople,	3	10	Valparaiso,		40 brls.	Sulphur—		
Honolulu,	100 brls.		Potassium Bichromate—			Soda Alkali—			Halifax,	7 t. 10 c.	
Coal Products (otherwise under.)—			Rio de Janeiro,	1 t.	11 c.	Antwerp,		40 brls.	Boston,	840	16
Boston,	51 kgs.		Ghent,	3	3	Zante,	32		Superphosphates—		
New York,	40 cks.		Antwerp,	3	3	Soda Ash—			Las Palmas,	20 t.	
Copper Sulphate—			B. Ayres,	5	7	Antwerp,	1,250 bgs.		Stettin,	680	13 c.
Vera Cruz,	7 c.	£6	Vera Cruz,	1	42	Boston,	400		Riga,	1,049	18
Rio de Janeiro,	6	1 q.	Constantinople,	3	10	B. Ayres,	680	46 tcs.	Gd. Canary,	10	
Bourgas,	1 t.	1	Potassium Carbonate—			Calcutta,		100 brls. 150 cks.	Teneriffe,	30	
Rotterdam,	5	2	Santander,	7 c.	£9	Copenhagen,	30 kgs.		Tannic Acid—		
Antwerp,	4	19	Baltimore,	15	24	Corfu,	75		Montreal,	10 c.	
Smyrna,	17	1	Potassium Chlorate—			Fiume,	100 bgs.		Varnish—		
Bordeaux,	4	17	Vera Cruz,	10 c.	£18	Genoa,	220		Algoa Bay,		2 cs.
Melbourne,	5		Pasages,	3 t.	99	Ghent,	150		Antwerp,	20 cks.	
Rouen,	10		Sydney,	5	163	Hamburg,	370		Barcelona,		2 pks.
Constantinople,	2	10	Gotenburg,	8	274	Havana,			Boston,	12	
Dantzig,	5	1	Philadelphia,	3	5	Hiogo,			B. Ayres,	2	
Cette,	61	13	Havana,	1	10	Jaffa,	525		Catania,	1	
Copperas—			Yokohama,	20 cs.	270	Kobe,	131		Genoa,	11 cks.	
Sydney,	5 t.	11 c.	Shanghai,	60	600	Malta,	50		Leghorn,		9
Rio de Janeiro,	2	10	Hiogo,	25	1,050	Melbourne,	167		Lisbon,	7	
Santos,	2	8	Hamburg,	5	192	Newfairwater,			Montreal,	8	20
Bourgas,	3	13	Potassium Prussiate—			N. Orleans,	21		Valparaiso,		
Alexandria,	9	8	Genoa,	19 c.	3 q.	New York,	240		White Lead—		
Syria,	3	16	Potassium Stannate—			Patras,	53		Algoa Bay,	120 dms.	
Disinfectants—			Bombay,	13 c.	£40	Philadelphia,	200	227 tcs.	Bahia,	80 kgs.	
Piræus,	1 c.	£7	Salt—			Rio de Janeiro,		90	Bordeaux,	2 t. 7 c.	
Guano—			Algoa Bay,	22 t.	6 c.	Rotterdam,	350		Calcutta,	9 kgs.	
Malaga,	4 t.	3 c.	Amsterdam,	100		San Sebastian,	50				
Gypsum—			Antwerp,	140		Seville,	150				
Boston,	3 t.	10 c.	Baltimore,		500 sks.	Stettin,	250 bls.				
Montreal,	5	6	Boston,	300		Sydney,	79 brls.				
Iron Oxide—			Calcutta,	4,624		Trieste,	306 bgs.	100			
B. Ayres,	390 t.	£1,170	Cape Lahou,	9		Yokohama,					
Lead Acetate—			Christiania,		150	Soda Crystals—					
Calcutta,	1 t.	15 c.	Delagoa Bay,		56	Bombay,	250 kgs.				
Magnesia—			Egwanga,	1,979 bgs.		Boston,	250 kgs.				
Odessa,	27 pks.		Ghent,	390 t.	50 cs.	Calcutta,	56 brls.				
Philadelphia,	25 cs.		Gibraltar,			Delagoa Bay,	33				
Valparaiso,	10		Lagos,	2,489 bgs.	1,400	Galatz,	10				
Magnesium Sulphate—			Montreal,		8,348	Honolulu,	50	20			
Ceara,	2 kgs.		Newport News,		2,180	M. Video,		67 cks.			
Hamburg,	6 cs.		N. Orleans,		1,000	Montreal,	105				
Rio de Janeiro,	150		New York,	285 t.		Opobo,	20 bgs.				
Manganates—			Rangoon,	40		Philadelphia,	347				
Hamburg,	10 c.	£7	Richibucto,	780		Pt. Natal,	115 kgs.				
Manure—			Rio de Janeiro,	200		San Francisco,	500				
Valencia,	3 t.	1 c.	St. John's,	4		Shanghai,		10			
Gd. Canary,	2		San Francisco,	10		Sodium Acetate—					
Las Palmas,	15		Sydney,	300		Vera Cruz,		3 cks.			
Oxalic Acid—			Trinidad,	100		Sodium Bicarbonate—					
Boston,	3 t.	8 c.	Vancouver,	65		Adelaide,	25 bgs.				
Paint—			Victoria,	25		Alexandria,	87 kgs.	40 brls.			
Alexandria,	5 cks.	15 pks.	Salt Cake—			Antwerp,	41	31 cks.			
Amsterdam,	5	6 kgs.	Callao,	5 t.	4 c.	Barbadoes,	50				
Beyrout,	1 cs.	30	New York,	4	10	Bilbao,	285				
Boston,		12 brls.	Sheep Dip—			Bombay,	975	65			
Cabedello,	100		Belize,	1 t.	1 q.	Calcutta,	60				
Calcutta,	5	400	Punta Arenas,	6 t.	3	Constantinople,					
Colon,	1		Beira,	2	6	Soap—					
Curacao,		103	Soap—			Algoa Bay,	1,485 bxs.	230 cs.			
Guayaquil,	2	30	Amsterdam,	1:5				3 bdl.			
Havana,	6		Antwerp,	54							
Lagos,	70		Barbadoes,	500							
Lisbon,	5 dms.		Bombay,		20 cks.						
Malta,	52		B. Ayres,		1						
Mayaguez,	8		Calcutta,		30						
New York,	110	16 cs.	Cameroons,	50							
Rotterdam,	5	20	Canaries,	480							
St. John's,	3	160	Caracas,		1						
San Juan,	1		Cape Town,	1,370							
Savannah,	344		Colon,	120							
Shanghai,	30	40 dms.	Constantinople,	20 kgs.							
Stettin,	12		Curacao,	100 bxs.							
Sydney,			Corfu,		1						
Trieste,			Delagoa Bay,	816							
Painters' Colours—			Demerara,	1,000							
Antwerp,	1 cs.		E. London,	525							
Baltimore,		80 cks.	Gibraltar,		40						
Calcutta,	20		Guayaquil,	50							
Hamburg,		20 kgs.	Hamburg,		500 bdl.						
Havana,	9		Havre,		780						
Honolulu,	63	40	Honolulu,	50							
Lisbon,	100 pks.		Lagos,	100							
Paraffin Wax—			Lanzarote,	60							
Alexandria,	10 cs.		Manaos,	100							
Boston,	20		Mauritius,	509							
Constantinople,	10 bgs.		Montreal,		500						
Fiume,	29		Mosel Bay,	500							
Gijon,	20		Piræus,		20						
Jaffa,	7		Pt. Elizabeth,	75							
Rotterdam,	10		Rangoon,	6,850	62						

Sodium Bicarbonate—
Jerusalem, 6 brls.
Sodium Naphthionate—
Rotterdam, 32 cks.
Tallow—
Rotterdam, 19 cks.
Tar Oil—
Hamburg, 4 cks.
Turpentine—
Jaffa, 2 brls.

HULL.

Week ending July 24th.

Ammonium Sulphate—
Antwerp, 321 bgs.
Antimony—
Boston, 15 cks.
Benzol—
Amsterdam, 24 brls.
Bleaching Powder—
New York, 59 cks.
Caustic Soda—
Stettin, 34 dms.
Chemicals (otherwise undescribed)
Amsterdam, 10 cks.
Antwerp, 3 cs.
Bremen, 3
Copenhagen, 14 6
Christiania, { 24 20
Gothenburg, 10 15 lbs.
Hamburg, 45 10 pks.
Helsingfors, 3
Königsberg, 11
Lisbon, 15 dms.
Rotterdam, 5 8
Stettin, 32 7 9 pks.
St. Petersburg, 3
Cottonseed Oil—
Amsterdam, 323 c.
Antwerp, 509
Bremen, 21
Copenhagen, 67
Christiania, 24
Dunkirk, 558
Hamburg, 979
Haringen, 100
Rouen, 324
Rotterdam, 441
Dyestuffs (otherwise undescribed)
Amsterdam, 43 cks.
Boston, 11
Ghent, 1
Rotterdam, 10
Stettin, 2 cs.
Glue—
Amsterdam, 10 cks.
Hamburg, 1 bg.
Linseed Oil—
Antwerp, 7 c.
Bremen, 4
Bergen, 7
Copenhagen, 45
Christiania, 314
Christiansand, 243
Drontheim, 96
Hamburg, 35
Naphtha—
Copenhagen, 4 dms.
Painters' Colours—
Amsterdam, 2 cks.
Antwerp, 33 2 cs. 50 pks.
Bremen, 13
Copenhagen, 6
Christiania, 2 3
Christiansand, 43
Drontheim, 10
Ghent, 28
Gothenburg, 1
Hamburg, 1
Helsingfors, 1 11
Rouen, 16
Rotterdam, 8 13 22
Stettin, 19 20
St. Petersburg, 8
Wyburg, 1
Pitch—
Antwerp, 112 t.
Rotterdam, 3 cks.
Gothenburg, 1 cs.
Soap—
Rotterdam, 40 cs.
Starch—
Copenhagen, 125 cs.
Christiania, 15 pks.
Tallow—
Amsterdam, 13 cks.
Dunkirk, 43

Tar—
Helsingfors, 110 cks.
Königsberg, 10
Stettin, 5
Wyburg, 25
Varnish—
Copenhagen, 9 dms.
Gothenburg, 1 cs.
Stettin, 7 cks.
St. Petersburg, 7
Stockholm, 2

GLASGOW.

Week ending July 20th.

Acetic Acid—
Rio de Janeiro, £25
Ammonium Sulphate—
Amsterdam, 304 t. 10 c.
Genoa, 10 5½
Italy, 34 18½
Bisulphite of Lime—
Ootacamund, 1 t. 10¼ c.
Bleaching Powder—
Calcutta, 24 t. 19 c.
Boracic Acid—
Japan, £20. 14s.
Yokohama, 20
Carbolic Acid—
Hong Kong, £23
Carbonate of Lime—
Lisbon, £20
Castor Oil—
Adelaide, 2,475 lbs.
Caustic Soda—
Canada, 15 t. 1½ c.
Rangoon, 3 6¼
Chemicals (otherwise undescribed)
Rotterdam, £322
Coal Products—
Benzine
France, £225
Cresote Oil
France, £5,032
Naphtha
Rouen, £40
Pitch
Canada, £71
U.S.A., 30 t. 10½ c. 190
Tar
Boston, U.S.A., £118
U.S.A., 25
Calcutta, 293
Rangoon, 104
St. Petersburg, 1,050
Transvaal, 30
Dextrine—
New York, 28 t. 4½ c.
Dried Blood—
Rouen, 10 t.
Dyestuffs (otherwise undescribed)
Rio de Janeiro, £210
Extracts—
Toronto, £67
Waterloo, 66
Canada, £157. 9s.
Farina—
Rio de Janeiro, 3 t. 9½ c.
Gelatine—
Canada, £73
Glucose—
Canada, 2 t. 19 c.
Glue—
Johannesburg, £35
Rangoon, 42
Lead Nitrate—
Canada, 8 t. 3 c.
Italy, £98
Lead Sulphate—
Stockholm, 5 t.
Linseed Oil—
Canada, 8 t. 12¼ c.
Huelva, qty.
Santos, 1 t. 4¾
Shanghai, 1 12
Kingston, 4 16¼
Hong Kong, 8 4
Litharge—
Johannesburg, £21
Logwood—
Montreal, £63
Canada, 31
Magnesium Sulphate—
Rio de Janeiro, £40
Manganese Oxide—
U.S.A., £105

Paint—
Pt. Louis, £73. 10s.
Colombo, 26 10
Painters' Colours—
Barbadoes, £56
Boston, 39
Cape Town, qty.
Mauritius, "
Singapore, 67
Delagoa Bay, 52
Montreal, 285
Rotterdam, 35
Calcutta, 1,064
Chefoo, "
Hong Kong, "
Shanghai, 68

Paraffin Wax

Stockholm, £75
Amsterdam, 120
Genoa, 39
Italy, 494
Phosphoric Acid—
Christiania, £6
Potassium Bichromate—
Lisbon, £164
Italy, 236
Salt Cake—
Terneuzen, 246 t. 6 c.
Sheep Dip—
Punta Arenas, £47
Soap—
Canada, 2 t. 12 c.
Hong Kong, 2 13½
Sodium Bichromate—
Lisbon, 1 t. 9¼ c.
Canada, 5 2
Italy, 15 19¼
Starch—
Rio de Janeiro, £244
Rotterdam, 5 c.
Stearine—
Italy, 1 t. 10¼ c.
Sulphuric Acid—
Colombo, £73
Rangoon, 297
Tallow—
Rangoon, 3 t. 13¼ c.
Treacle—
Bergen, 6 t. 15 c.
Christiania, 1 11
Varnish—
Valparaiso, £17
White Lead—
Transvaal, £105

TYNE.

Week ending July 24th.

Alkali—
St. Petersburg, 1 t. 9 c.
Rotterdam, 5 1
Hamburg, 5 2
Christiania, 2 4
Amsterdam, 19
Alum—
Seville, 2 t. 3 c.
Ammonia—
St. Petersburg, 3 t. 6 c.
Barcelona, 1 15
Ammonium Chlorate—
Seville, 16 c.
Anthracene—
Rotterdam, 35 t. 15 c.
Antimony—
St. Petersburg, 15 t. 10 c.
Rotterdam, 1
Hamburg, 3 10
Barcelona, 10
New York, 60
Arsenic—
Barcelona, 7 c.
Barium Carbonate—
Hamburg, 25 t. 11 c.
Blanc Fixe—
Barcelona, 5 t. 2 c.
Bleaching Powder—
Bergen, 19 t. 19 c.
St. Petersburg, 35 4
Rotterdam, 24 15
Copenhagen, 51
Gothenburg, 25 3
Hamburg, 24 19
Amsterdam, 55 7
Helsingfors, 49 10
Antwerp, 13 17
New York, 7 9
Christiania, 10 3
Castor Oil—
Bergen, 1 t. 1 c.

Caustic Soda—
Venice, 33 t. 18 c.
Seville, 63 17
Copenhagen, 12 3
Gothenburg, 9 17
Hamburg, 39 5
Abo, 1 1
Helsingfors, 45 19
Antwerp, 113 9
New York, 218
Chemicals (otherwise undescribed)
Helsingfors, 1 t. 1 c.
Gypsum—
New York, 36 t. 14 c.
Litharge—
Seville, 10 c.
Copenhagen, 1 t. 9
Hamburg, 17
Amsterdam, 11
Helsingfors, 5
Magnesia—
Copenhagen, 5 c.
Barcelona, 2 t. 1
Paint—
Hamburg, 1 c.
Antwerp, 6 t. 9
Phosphorus—
Seville, 16 c.
Plumbago—
Bergen, 4 c.
Potash Salts—
St. Petersburg, 1 t. 1 c.
Salt—
Copenhagen, 3 q.
Soap—
Copenhagen, 3 c.
Soda—
Venice, 13 t.
Frederikshavn, 10 2 c.
Rotterdam, 20
Aarhaus, 5 17
Amsterdam, 20 4
Helsingfors, 15 1
Wyburg, 8 5
Antwerp, 4 19
Christiania, 10 6
Soda Ash—
Hamburg, 6 t. 8 c.
Abo, 51 16
Wyburg, 115 16
Sodium Hyposulphite—
New York, 24 t. 18 c.
Sodium Nitrate—
Barcelona, 7 c.
Sodium Silicate—
Seville, 5 t. 6 c.
Sulphur—
Gothenburg, 15 t.
Christiania, 400

GOOLE.

Week ending July 21st.

Chemicals (otherwise undescribed)
Amsterdam, 20 cks. 30 dms.
Coal Products (otherwise undescribed)
Amsterdam, 6 cks.
Antwerp, 27
Boulogne, 5 pks. 1 cs. 2 dms.
Ghent, 2 cks.
Rotterdam, 77 2
Colours—
Amsterdam, 10 bgs.
Boulogne, 1 ck. 4 cs.
Dunkirk, 20 dms.
Ghent, 7
Hamburg, 1
Haringen, 1
Dyestuffs (otherwise undescribed)
Ghent, 22 cks. 2 cs. 112 bgs.
Hamburg, 3
Manure—
Ghent, 229 bgs.
Pitch—
Antwerp, 150 t.
Dunkirk, 70
Salt—
Rotterdam, 80 bgs.

GRIMSBY.

Week ending July 24th.

Coal Products (otherwise undescribed)
Dieppe, 25 cks.
Colours—
Antwerp, 4 cks.
Rotterdam, 1
Dyestuffs (otherwise undescribed)
Dieppe, 1 cs.

PRICES CURRENT.

WEDNESDAY, AUGUST 4TH, 1897

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.B. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary

Acids:—		£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/9	&	8/6
Glacial	per lb.	40/-		
Arsenic S.G., 2000°	per lb.	1	4	0
Fluoric	per lb.	0	0	3½
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0	10
(Cylinder), 30° Tw.	per lb.	0	3	0
Nitric 80° Tw.	per lb.	0	0	1½
Nitrous	per lb.	0	0	1½
Oxalic	nett	0	0	3½
Phosphoric, 1750°	per ton	0	0	11½
Picric	per ton	0	0	11
Sulphuric (fuming 50 %)	per ton	15	10	0
(monohydrate)	per ton	5	10	0
(Pyrites, 168°)	per ton	3	0	0
(free from arsenic, 145°)	per ton	1	5	0
Sulphurous (solution) S.G. 1025	per ton	3	0	0
Tannic (pure)	per lb.	0	1	2½
Tartaric	per ton	0	1	1
Arsenic, white powdered	nett per ton	22	0	0
Alum (loose lump)	per ton	4	10	0
Alumina Sulphate (pure)	per ton	4	2	6
Aluminoferrous	per ton	2	3	6
Aluminium (Ingot metal 98/99¼ %)	nett	148	0	0
Ammonia, Anhydrous	per lb.	0	0	1 3
" 880 = 28° B.	per lb.	0	0	2½
" = 24° B.	per lb.	0	0	1½
Carbonate	nett	0	0	3
Muriate	per ton	18	0	0
(sal-ammoniac) 1st & 2nd	per cwt.	33	&	31
Nitrate	per ton	31	0	0
Phosphate	per lb.	0	0	3½
Sulphate (grey) London	per ton	7	10	0
(grey) Hull	per ton	7	10	0
Aniline Oil (pure)	per lb.	0	0	7½
Aniline Salt	per lb.	0	0	7
Antimony	per ton	29	15	0
(tartar emetic)	per lb.	0	0	9
(golden sulphide)	per lb.	0	0	10
Barium Chloride	per ton	6	10	0
Carbonate (native)	per ton	3	10	0
Sulphate (native levigated)	per ton	42/6	to	65/-
Bleaching Powder, 35 %	nett	6	7	6
Liquor, 7 %	per ton	3	10	0
Bisulphide of Carbon	per ton	12	0	0
Chromium Acetate (crystal)	per lb.	0	0	6
Calcium Chloride	per ton	2	2	6
China Clay (at Runcorn) in bulk	per ton	15/-	to	30/-
Coal Tar Products and Dyes:—				
Alizarine (artificial) 20 %	nett per lb.	0	0	6½
Magenta	per lb.	0	3	9
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0	0	6½
Benzol, 90's	per gallon	0	2	1
50/90	per gallon	0	2	1
Carbolic Acid (crude 60°)	per gallon	0	1	11
(crystallised 40°)	per lb.	0	0	7½
(liquid 95/97 %)	per gallon	0	1	0
Creosote (ordinary)	per ton	0	0	2
(filtered for Lucigen light)	per ton	0	0	2½
Crude Naphtha 30 % @ 120° C.	per ton	0	0	11
Grease Oils, 22° Tw.	per ton	2	15	0
Pitch, f.o.b. Liverpool or Garston	per ton	1	1	0
Solvent Naphtha, 90 % at 160°	per gallon	0	1	7
Copper	per ton	47	15	0
Sulphate	per ton	15	15	0
Oxide (copper scales)	per ton	44	10	0
Glycerine (crude)	per ton	30	0	0
(distilled S.G. 1250°)	per ton	60	0	0
Iodine	nett, per oz.	0	0	7½
Iron Sulphate (copperas)	per ton	1	10	0
Sulphide (antimony slag)	per ton	2	0	0
Lead (sheet) for cash	per ton	13	17	6
Litharge Flake (ex ship)	per ton	14	15	0
Acetate (white)	per ton	22	0	0
(brown)	per ton	15	0	0
Carbonate (white lead) pure	per ton	16	15	0
Nitrate	per ton	19	0	0
Lime, Acetate (brown) (ex ship)	per ton	4	15	0
(grey) (ex ship)	per ton	8	2	6
Magnesium (ribbon and wire)	per oz.	0	2	3
Chloride (ex ship)	per ton	2	10	0
Carbonate	per cwt.	1	17	0
Calcined Magnesia	per ton	9	0	0
Sulphate (Epsom Salts)	per ton	2	15	0
Manganese, Sulphate	per ton	16	0	0
Borate	per cwt.	2	10	0
Ore, 70 %	per ton	3	10	0
Methylated Spirit, 61° O.P.	per gallon	0	1	8
Naphtha (Wood), Solvent	per gallon	0	2	9
Miscible, 60° O.P.	per gallon	0	3	9
Oils:—				
Cotton-seed	per ton	16	10	0
Linseed	per ton	17	10	0
Stearine	per ton	20	0	0
Phosphorus (yellow)	per lb.	0	2	2
(red)	per lb.	0	2	8
Potassium (metal)	per oz.	0	3	7
Bichromate	nett per lb.	0	0	4½
Carbonate, 90% (ex ship)	per ton	16	10	0
Chlorate	per lb.	0	0	4
Cyanide, 98%	per ton	23	0	10½
Hydrate (Caustic Potash) 90%	per ton	20	15	0
(Caustic Potash) 75/80%	per ton	20	0	0
(Caustic Potash) 70/75%	per ton	19	10	0
Nitrate (refined)	per cwt.	1	1	6
Permanganate	per cwt.	3	15	0
Prussiate Yellow	per lb.	0	0	5½
Sulphate, 90% (ex ship)	per ton	9	15	0
Muriate, 80% (do.)	per ton	8	10	0
Silver (metal)	per oz.	0	2	1½
Sodium (metal)	per lb.	0	2	11
Carb. (refined Soda-ash) 48%	nett per ton	4	15	0
(Caustic Soda-ash) 48%	per ton	4	5	0
(Carb. Soda-ash) 48%	per ton	4	0	0
(Alkali) 58%	per ton	3	17	0
(Soda Crystals)	per ton	2	5	0
Acetate (ex-ship)	per ton	12	5	0
Arseniate, 45%	per ton	14	7	6
Chlorate	per lb.	0	0	4½
Borate (Borax)	net, per ton	14	15	0
Bichromate	per lb.	0	0	3½
Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	per ton	8	15	0
(74 % Caustic Soda)	per ton	8	0	0
(70 % Caustic Soda)	per ton	7	2	6
(60 % Caustic Soda)	per ton	6	2	6
(pure liquor 90° Tw.)	per ton	3	12	6
77/78 % powdered (99 % hydrate)	per ton	12	10	0
Bicarbonate	per ton	6	10	0
Hyposulphite	per ton	5	0	0
Manganate, 25%	per ton	15	0	0
Nitrate (95 %) ex-ship Liverpool	per cwt.	0	7	6
Nitrite, 98%	per ton	27	10	0
Phosphate	per ton	10	10	0
Silicate (glass)	per ton	4	10	0
(liquid, 100° Tw.)	per ton	3	10	0
Stannate, 40%	per cwt.	3	2	9
Sulphate (Salt-cake)	per ton	0	19	0
(Glauber's Salts)	per ton	1	7	6
Sulphide	per ton	6	15	0
Sulphite	per ton	5	0	0
Strontium Hydrate, 100%	per ton	10	15	0
Sulphocyanide Ammonium, 95%	per lb.	0	0	6
Barium, 95%	per lb.	0	0	4½
Potassium	per lb.	0	0	6½
Sulphur (Flowers)	per ton	7	10	0
(Roll Brimstone)	per ton	6	10	0
Brimstone: Best Quality	per ton	4	12	6
Superphosphate of Lime (26%)	per ton	2	5	0
Tallow	per ton	18	10	0
Tin Crystals	per lb.	0	0	4½
English Ingots	per ton	65	10	0
Zinc (Spelter)	per ton	17	0	0
Chloride (solution, 100° Tw.)	per ton	4	17	6
Sulphate, Crystal	per ton	5	2	6

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Contents.

PAGE	PAGE
The Beginning of the End	97
The World's Supply of Quinine	98
The Patent List	99
Abstracts of Latest Complete Specifications	99
Parliamentary Jottings	99
Pimbley's Economiser	100
Mersey and Irwell Joint Committee	100
The Explosive Hair-wash Fatality	101
Selected Correspondence	102
Practical Hints on Limestone Analysis	102
Legal Intelligence	102
Monopolies in Spain	103
Exports of Alkali and Bleach	104
Exports of Petroleum from U.S.A.	104
Fatal Fire at a Tar Works	104
Trade Notes	104
Tar and Ammonia Products	105
Miscellaneous Chemical Market	105
Report on Manure Material	105
The Metal Markets	105
Liverpool Oil and Colour Market	105
West of Scotland Chemicals	105
Tyne Chemical Report	106
New Companies	106
Imports	106
Exports	109
Prices Current	112

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Communications for the Editor, if intended for insertion in the current week's issue, should reach the office not later than **Tuesday morning**.

The Terms of Subscription, commencing at any date, to the *Chemical Trade Journal*—payable in advance—including postage to any part of the world are as follows:—

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THE BEGINNING OF THE END.

AFTER a long fight, there at last appears to be some reason to hope that common-sense and "undiluted" science will win the day for safe burning oil.

The doings, or rather misdoings, of the all too well known Oil Trust have begun to arrest the attention of the English people, and this having been accomplished most of the advocates of safe oil will be content to leave the Trust alone, because concurrently general interest will have been aroused in the oil question *per se*. Among the honest advocates of safe oil—and they are plentiful—the exposure of the Trust has admittedly been a means to an end, namely the means for inducing interest in the comparatively prosaic question of safety. The entire rectification of the rascality exposed does not come within the province of a party, in fact it may not even be the duty of a nation to purify the world. We shall do well if we simply keep our own doorstep clean. As long as the truth about dangerous and safe burning oils is not smothered in this country, we are practically content.

After much groping in the dark the lay press now seems to grasp this fact, and has suddenly awoke to a sense of duty regarding the importation of dangerous oil. The sense of satisfaction that four years' persistent if unprofitable advocacy of the truth has not been wasted after all, is so great, however, that it obliterates the remembrance of the weariness of waiting.

Already six or seven leading daily papers have devoted leaderettes to the exposition of the main facts, while powerful weeklies like the *Economist* have done the same. Once widely voiced, as it now is, it should be impossible for trade interests to suppress the truth any longer, however fair or foul their endeavours may be. Yet to make assurance doubly sure we would earnestly plead with the daily press to scrutinise any further "facts" they may have occasion to notice, as, after having succeeded in keeping the muzzle on for 20 years, now that the public sleuth hounds are able to bite as well as bark the Oil Trust will leave no stone unturned in trying to prove they are suffering from rabies. To this end we would draw attention to the following excerpt from a leader in a well-established organ of the American oil trade:

"The exports of petroleum during the fiscal year ending June 30, 1897, were the largest in the history of the petroleum industry, amounting to 963,924,021 gallons, and valued at \$61,733,685. This is an increase of 83,569,896 gallons over the exports during the preceding fiscal year. This certainly shows a gratifying growth during a year of depression and one during which strenuous efforts were made to crowd the American product out of the foreign markets and popularise the cheaper but inferior Russian product.

Now contrast this astoundingly audacious statement with a few of the facts elicited in the recent Petroleum Inquiry. The scarcity of oil was made a plea that better oil could not be supplied, and also that it would mean a great advance in price. The price bogey has been knocked down by several eminent scientists, but touching the fundamental plea of

scarcity, it should be noted that, scarcity or no scarcity, this "year of depression" has been a record one. Moreover, out of the extra 83 million gallons exported, over 55 million gallons were illuminating oil, while the exports of "residuum" jumped from just under 200 thousand gallons to almost six million gallons. An increase of 3,000 per cent.

To proceed to the words we have italicised, we find a most remarkable admission. It has long been the boast of the Oil Trust that they produce the best and cheapest oil. They pose as public benefactors in consequence, and insinuate that for this reason they should be left alone to do just what they like regarding the oil supplied to this country. It is unfortunate for them that while whining about Russian competition their mouthpiece should acknowledge the fact that there are other producers who supply cheaper oil than the cheapest and best.

We have not overlooked our contemporary's qualification of the word cheaper, by adding "but inferior" product. We left it till last because it is this mendacious qualification that convicts them of deliberate falsehood. A technical leader-writer is supposed to have some technical knowledge of what he writes about, yet just compare this charge of inferiority with the facts stated before the Parliamentary Committee.

Various evidence was given touching the relative illuminating powers and burning qualities of American and Russian oils, but Dr. Stevenson Macadam, in particular, handed in exhaustive experiments that showed there was practically no difference in the illuminating values of the two oils. On the other hand Sir H. E. Roscoe showed that the American cheap oil contained 22% of impurities not to be found in the Russian lamp oils. It is rather hard therefore to see where the inferiority of the latter comes in. That it is cheaper by 1d. to 2d. a gallon, current retail prices in this country show day by day! Last but not least in the matter of *safety* the Russian oil has a flash point of 85° F., as against 75° to 76° F. for the American. What is more, the Russian Government has offered to send in all their oil above 90° F., *without change of price*, if only the American producers are made to do the same, at any price they like. Yet our legislators hesitate, and our chief Inspector of Explosives temporises, and suggests prolonging the inquiry for his further evidence.

If it reveals as much ignorance of elementary physics as his earlier evidence, it is not worth waiting for.

Instead of snivelling about Russian competition in their record year, let the makers of the cheapest and best meet makers of the "cheaper but inferior" on their own proposal, and show that they are something more than mere windbags by also raising all American oil to 90° F.

At the same time, in the face of the foregoing facts, the deliberate utterance of the "cheaper but inferior"—well—sneer, to put it mildly, shows how carefully the arguments defending low-flash oil must be investigated before giving them currency in the daily press. There is not the slightest doubt that when the Truth fails them the Oil Trust is equally adroit in handling the other weapon. Whatever their hands find to do they do it with all their *might*—the *mighty* dollars, the amassing of which has often been achieved by seizing the "mites" of the widow and the poor. In commercial tactics, and Parliamentary inquiries likewise, they are as shifty and hard to catch as the cheese-bred article. The instance we have dealt with is an example—act accordingly.

Obituary.—News of the death of Professor Victor Meyer, the well-known chemist of the Heidelberg University, comes from Berlin. Subsequent reports state that the eminent professor poisoned himself on Monday on account of family troubles.

THE WORLD'S SUPPLY OF QUININE.

[SPECIALLY CONTRIBUTED.]

QUININE has long held an important place in the British Pharmacopœia, and during the last fifteen years it has been a most important item in the drug market. Owing to the way in which its production has increased in this period, it is interesting to note the fluctuations that have characterised its career.

On the whole it has not been a very chequered one, and in some cases there have been phases that are positively brilliant. Before dealing at all fully with the developments of the world's supply, it will be as well to briefly summarize the progress of the article since 1881, from which year this article first takes cognisance. Up to the end of 1882 there was a steady rise, but in the ensuing year the rate of increase was doubled. From this date up to the end of 1888 there was a steady and uneventful rise, this period of steady progress being followed by an increase in 1889 and 1890, which compares very closely with that which occurred in the years 1881 to 1883. By the close of 1891 the production had reached its maximum, since when it has very slowly, but undoubtedly, declined; speaking, that is to the end of 1896, later than which there are no reliable statistics available.

Reverting once more to the opening of the period under review, we are able to trace the following interesting statistics indicative of the actual rise in the production year by year. Starting with a total production of 137.2 tons in the opening of 1881, the year closed with an advance to 156.8 tons. In 1882 the advance was smaller, only amounting to an additional increase of 9.8 tons. This state of quiescence was soon superseded by a period of great activity, that led to a brilliant increase in the output, for during 1883 the total production rose to 266 tons, an advance on the previous year of 39.4 tons. During the next five years there was a steady increase, the rate of progress being remarkably rhythmical when viewed as a series of curves on a diagram of the output. In these five years, however, the total had crept up to the respectable figure of 231.28 tons.

In 1889 a sudden development once more set in, an increased production of 19.6 tons being followed in 1890 with a further rise of close on 40 tons, bringing the total output at the end of that year up to 290 tons. The following year the maximum was reached, the actual progress in the last year of this constantly rising output being comparatively small, as the year (1891) closed with a grand total of 304 tons.

The zenith having been reached, the inevitable tracing of the downward path has to follow. During 1892 and 1893, however, the declension was as slight as the advances in the years 1884 to 1886 inclusive, so that it is scarcely fair to speak in any but the most temperate language of these two years. In round figures the actual decline did not exceed 10 tons for the two years. Concerning the next two years of 1894 and 1895 it is not possible to speak so favourably, as the decrease was certainly much more marked, being about 22 to 23 tons. In 1896, however, there was some prospect of the decline being less rapid, so that this year (which closes this review) ended with a total production of 264.6 tons. Such is the record of the world's supply.

Whatever the interest of the world's supply may be, however, it pales before the interest excited by the history of the

CENTRES OF SUPPLY,

the united contributions from which have built up the figures that are given above.

The individuality of the figures connected with these centres appeals to all planters, either on account of their dealing with the centres at which their own plantations are situated, or because they relate to the progress of their rivals. For the purpose of this article these centres will be taken in the order of their importance instead of their chronological order. Viewed in the latter way, there have been some remarkable changes. America, with its supplies from wild cinchona, was the chief source of production. Ever since 1883, however, it rapidly gave place to Ceylon, so that when the latter was far and away the largest producing country, in 1887 the American supply had dwindled down to most insignificant proportions. It will be seen, therefore, that by this method of treatment only a fragmentary idea of the individual centres and their actual importance would be gained, whereas by taking them in the order of their present standing something like a systematic comparison can be made.

(To be continued.)

DIAMOND EMERY CO. LTD.—At the first annual meeting of this Company, held on Friday, August 6th, a dividend of 5 per cent. on the first year's workings was declared.

WATER CONSUMPTION IN MANCHESTER.—The consumption of water within the area of supply of the Manchester Waterworks, always heavy in a season of drought, on Wednesday, August 4th, reached the unprecedented figure of 38,000,000 gallons. The average consumption last week was 33,000,000 gallons daily.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Preparing Tanning Extracts. H. H. Lake. 17,529. July 26.
Metallic zinc from blende. C. F. Claus. 17,600. July 27.
Manufacture of Metallic Carbides. I. L. Roberts. 17,609. July 27.
Artificial Fuel. C. H. B. Forester and the Patent Agglomeration Fuel Syndicate, Ltd. 17,635. July 27.
Purifying Gas. H. H. Lake. 17,644. July 27.
Smoke-preventing Appliance. J. W. Claridge. 17,669. July 28.
Electrolysing Salts of Alkaline and Earthy Metals to produce Caustic, Chlorine, Bleaching Powder, etc. F. H. and F. E. Bowman. 17,683. July 28.
Making Soap. R. Gesell. 17,738. July 28.
Self-lubricating Material. J. W. Haley and I. E. Hobart. 17,750. July 28.
Improvements in Filter Presses. J. W. Hartley. 17,773. July 29.
Manufacture of White Lead. J. Noad. 17,774. July 29.
Manufacture of White Lead. J. Noad. 17,775. July 29.
Treating Metallic Chlorides obtained from sulphide Ores. E. F. Turner. 17,834. July 29.
Electro Deposition of Metals. J. Holloway. 17,837. July 29.
Cooling Liquids. C. H. Berry and F. R. Putz. 17,877. July 30.
Imperishable Carbon Paint. J. Livingstone and A. F. Crawford. 17,897. July 30.
Manure from Waste Leather and Phosphate of Lime. W. E. Rowlands. 17,926. July 30.
Manufacture of Hydrogen Peroxide. C. J. Yarnold. 17,930. July 30.
Oxidizing Ferrous Salts. J. C. Butterfield. 17,931. July 30.
Extracting Gutta Percha. W. Ramsey. 17,936. July 30.
Recovering Gold. H. L. Sulman and H. F. K. Picard. 18,007. July 31.
Improvements in Filter-press Cloths. J. C. Montgomerie. 18,026. July 31.

ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

These abstracts are specially prepared for the Chemical Trade Journal, and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.

Improvements in or Relating to Machinery or Apparatus Employed for Drying Extracts used for Dyeing Purposes. S. Smithson, Bright's Cottage, Heckmondwike, Yorks. Eng. Pat. 19,591. September 4, 1896.

A drum revolves in a tank containing the liquid extract, and conveys, by a shoot, a certain quantity to the periphery of a revolving steam-heated cylinder, on which the extract is dried, and removed in the solid state by scrapers. There are four drawings illustrating the construction of the plant. The actual feeding of the extract to the drying cylinder is effected by a small roll working in a trough under the drying cylinder. In this way the thickness of the layer of extract can be regulated according to the drying powers of the hot cylinder.

An Improved Process and Apparatus for the Concentration of Liquids. H. Bando and E. Schribaux, both of 11, Rue Michelet, Paris. Eng. Pat. 21,694. September 30, 1896.

This patent refers only to the treatment of alimentary products, such as wines, broth, milk, etc. The object is to remove water to lessen the cost of transit. The products are distilled *in vacuo*, and by the aid of analysers and condensers the aqueous portions of the volatile products given off are separated, and the vinous or other vapours condensed. These in the concentrated form mixed with the extracts are ready for market, and only want mixing with as much water as has been removed to be ready for use. There are two figures.

Improvements in Means for Condensing Nitrous Acid, or other Fumes or Vapours. J. L. Dobell, 45, Connaught-road, Harlesden. Eng. Pat. 18,137. August 15, 1896.

An upright chamber is connected at the top and bottom with two horizontal pipes packed with glass, pumice, or other material. At the far end the pipes unite in a charging box. The upper pipe inclines slightly towards this box. The lower one falls away more quickly from the box to the bottom of the upright end chamber. The gases to be condensed are passed into the lower pipe, pass through it to the charging box, travel along the almost horizontal upper pipe into the top of the end chamber, from whence any uncondensed gases escape. The bottom of the end chamber is enlarged and provided with a mid-rib which forms a trap where the condensed products collect. Water also may be introduced for the same purpose, its presence being desirable when nitrous fumes are to be recovered as nitric acid by injecting steam along with the fumes. Such apparatus may be

arranged in series so as to present an extensive condensing surface. There are three drawings showing the details of construction. A cock is provided for drawing off the condensed products as they collect at the bottom of the end chamber.

Improved Process and Apparatus for the Extraction of Gutta Percha from the Leaves and Twigs of Isonandra Gutta Percha and Kindred Plants. Siemens Bros. and Co., Ltd., 12, Queen Anne's-gate, Westminster, and E. F. A. Obach, 2, Victoria-road, Old Charlton, Kent. Eng. Pat. 19,046. August 28, 1896.

The gutta is extracted with petroleum spirit in suitable apparatus, and then precipitated by cooling. The twigs and leaves are crushed, but not pulverised, so as to avoid the formation of dust. They are then packed into wire cages or baskets, which in turn are placed in steam-jacketted, crucible-shaped digesters connected with a reflux condenser. The twigs are covered with petroleum spirit, steam is turned into the jacket and the extraction carried on for a suitable period. The solvent is then drawn off and live steam admitted into the interior of the digester to drive off the last traces of solvent. Paraffin wax may be used, in which case the gutta is imbedded in the wax on cooling. Being thus hermetically sealed and protected from the air, it is in a very convenient state for storage and transport. There is one diagram showing the general arrangement of the plant.

An Improved Process for Making a Consistent Friable Artificial Manure. I. Kovacs, 35, Eötvös-gasse, Budapesth. Eng. Pat. 13,811. June 4, 1897.

The usual treatment of phosphatic materials, with vitriol, to produce superphosphate is followed. Acid of about 106° Tw. is used, and in sufficient quantity to set free all the combined phosphoric acid, and leave an excess of about 10% of sulphuric acid. As is well known, this treatment produces a pulpy, moist mass. The patentee therefore adds peat meal, saw-dust, spent tan, or kieselguhr, preference being given to the first named. The amount added is equal to about 30% of the total weight of vitriol used. It is usually best to add the peat meal after treatment with acid, and not to mix it with the phosphate at the outset.

Improved Process for the Preparation and Purification of Solutions of Copper. J. C. Graham, 2, Garden-court, Temple, London. Eng. Pat. 17,127. August 1, 1896.

This invention merely applies to the patenting of two familiar steps in qualitative analysis. For electroplating purposes chloride of copper is not so useful as the sulphate. The impure chloride is therefore treated with just sufficient lime or alkali to throw down the iron. The precipitate is filtered off and the copper thrown down as hydroxide. The hydroxide is washed quite free from chlorides and dissolved in sulphuric acid. If a lead anode is used the acid is set free and can be used over again. The washing of the copper hydroxide can, it is stated, be best conducted by agitating with water in a centrifugal pump.

Parliamentary Jottings.

BOGUS AMERICAN DEGREES.

In the House of Commons last week Mr. J. W. Sidebotham asked the First Lord of the Treasury whether his attention had been called to an advertisement in a daily paper offering to confer degrees (*in absentia*) on gentlemen of undoubted character and ability; whether he was aware that the advertisement was inserted on behalf of a so-called National University of Chicago, which had for its agents here a Mr. Mendel, of Lee, and a Mr. Horn, who carried on this traffic at Manchester, Preston (at several addresses), and Jermyn-street, London, and who, according to his circular, offered degrees in the faculties of divinity, law, literature, philosophy, arts, and music; and that a letter had been received by an inquirer from the Chancellor of the institution to the effect that if the council fee of 5 dols. were forwarded, together with a recommendation from the agent, Mendel, a degree would be conferred; and whether there was any such institution in the United States known as the National University of Chicago; and if the Government would consider whether any steps could be taken to stop this alien interference with the duties and prerogatives of our authorised Universities.

Mr. Balfour: The question of my hon. friend refers to certain bogus degrees which are alleged to be sold or to be offered for sale at the present time in England. Whether it is practicable or desirable to prosecute those who grant these degrees for obtaining money under false pretences I am not sure, but I will have the matter looked into. I am not aware of any other method of dealing with the evil of which he complains.

PIMBLEY'S ECONOMISER.

THE principal advantage of Pimbley's patent forced circulating fuel economiser pipes is that they overcome one of the most objectionable features connected with economisers—viz, scaling.

As will be seen from the illustrations, the invention consists of a number of pipes of special construction 4 ft. long, and cast with an aperture through the centre, thus dividing the actual pipe into two pipes. The pipes are bolted to a long cast-iron top box, and are arranged with passages for conducting the water through each pipe. The water enters the economiser at the top box, and flows down the first half of the first pipe and up the other half of the first pipe, and then through the passage in the top box to the first half of the second pipe, and so on down and up every pipe until the water reaches the feed pipe to the boiler. Each pipe is fitted with caps top and bottom to facilitate cleaning. They are also fitted with scrapers worked from a beam coupled to a face-plate crank, affording a rotary motion and dispensing with the old-principled jack-reversing motion.

The mode of circulating the water through every pipe is thoroughly practical. It is pumped through the pipes with the greatest ease, without materially adding resistance or friction to any class of pump or injector used for the purpose.

produced at much lower temperature in the flue, at the same time preventing any sweating and giving a better circulation.

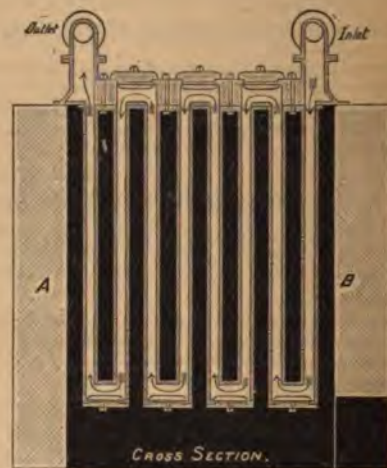
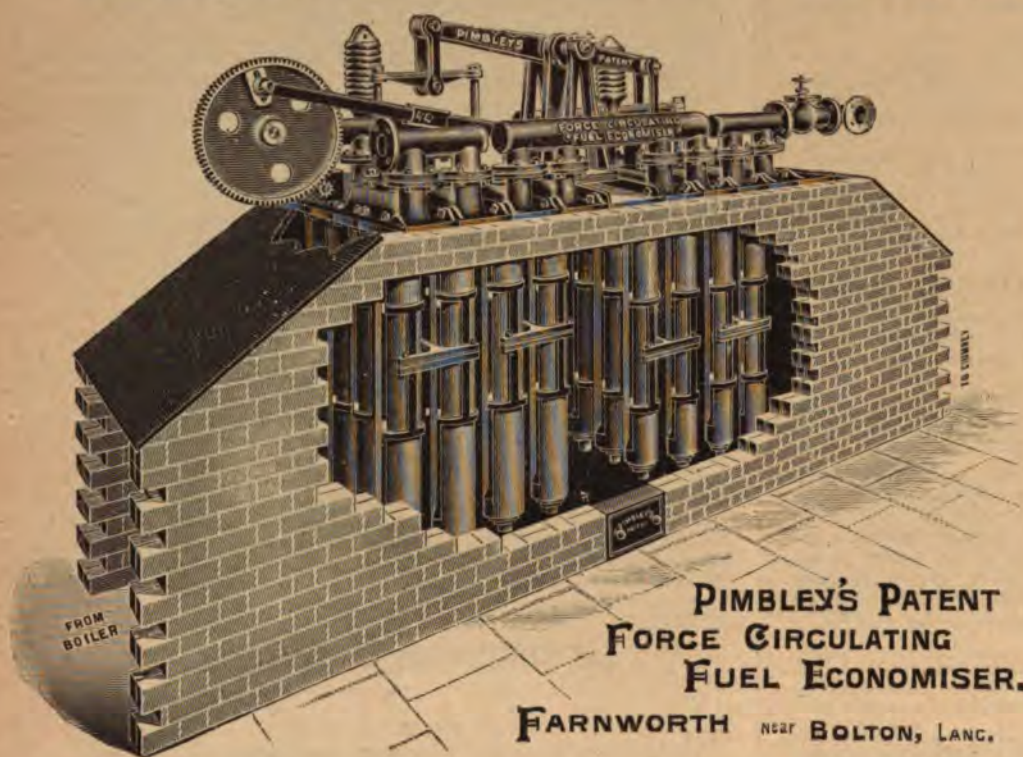
Tests have shown that under similar circumstances over 100% more heat can be obtained with 32 pipes. For these additional pipes little alteration of the brickwork is required, as the pipes can be fixed in any ordinary flue.

A patent has also been obtained which enables the Pimbley economiser pipes to be applied to marine boilers (a branch of business untouched by other economiser makers), where it can be used either for super-heating the feed water or super-heating the steam.

The economiser pipes for marine boilers are of similar construction to those used for land boilers, but are only 3 ft. long, and are mounted in a suitable frame, which enables them to be lowered into or lifted out of the flue at will without interrupting the circulation of the feed-water or steam, and without interfering with the working of the boiler.

THE MERSEY AND IRWELL JOINT COMMITTEE.

THE usual monthly meeting of this Committee was held on Monday at the offices, Mosley-street, Manchester, Sir John T. Hibbert



Before leaving the works every pipe is tested to a pressure of 500 lbs. per square inch. They are ordinary greensand castings, and of the best quality of iron.

In a word, this is everybody's economiser. It requires a small amount of brickwork; can be applied almost anywhere, and to any description of boiler. It does not sweat, because it absorbs all the hot gases at the top of the flue. It does not require a lot of attention, because all chains and reversing motion are dispensed with and a positive motion has been substituted. It does not scale because it has perfect circulation. It is safe, and can be insured. It can be blown off by admitting steam in the contrary direction to that in which the water is pumped. It can be fixed where other makes of economisers cannot be applied; and, lastly, it does not make bad draughts worse, because of its small displacement. The pipes can be easily replaced because they are bolted to the top boxes only. There are no bottom boxes, because all the pipes hang from the top of the economiser chamber; this arrangement allows them to expand and contract with perfect freedom. The pipes present three square inches of heating surface to each cubic inch of water they contain.

This economiser can be advantageously fixed between an economiser on the "Green" type and the chimney, allowing the feed water first to pass through the forced circulating economiser, then on to the economiser of the "Green" type. By so doing much greater heat will be

presiding. The Chairman reported that the deputation appointed by the Committee had waited upon the Local Government Board to urge a relaxation of the hard and fast rule that sewage should be purified by means of land filtration. The deputation was received by Mr. T. W. Russell, the Parliamentary Secretary, who said that a departmental committee would most likely be appointed to consider the matter. That had since been done, and they might hope that some good result would ensue from the visit of the deputation.

Mr. T. W. Killick submitted the report of the Consulting Sub-Committee. He said the case of the Royton Urban District Council was an illustration of the point on which the deputation had seen the Local Government Board. Royton, which was treating the sewage of a population of 13,000 by artificial filtration, and doing it satisfactorily, wished to obtain power to extend their scheme so as to take in an additional population of 1,300. The Local Government Board refused to sanction the scheme unless the filtration was done by land. That seemed an unreasonable position, for if a scheme for 13,000 of a population could be worked satisfactorily by artificial filtration, there could be no difficulty in dealing in the same way with an additional 1,300.

After some discussion, it was agreed that the attention of the Local Government Board should be called to the matter in connection with the recent visit of the deputation.

Mr. Killick brought before the meeting

THE CASE OF MANCHESTER.

He read a letter from the Town Clerk, explaining their position, and asking for more time. Mr. Killick said the Committee would remember that a year ago they received a very similar letter from the Corporation of Manchester. In July, 1896, Mr. Tatton reported that the flow of the Manchester sewage was 24 million gallons, of which 10 millions were treated by precipitation and four millions by precipitation and filtration, leaving ten millions untreated. At present twenty million gallons were treated by precipitation, but the flow had increased, and there were still four or five millions untreated. The report of Sir Henry Roscoe showed very clearly that the tank effluents were not improving. The grains of oxygen absorbed per gallon in the four hours' test were 3.22 in December, 1896; 4.12 in January, 1897; 2.95 in March; 1.34 in April; 2.43 in May; 4.49 in June; and 5.34 in July. It was sometimes complained that the limit of impurity fixed by the Joint Committee, which was roughly one grain per gallon, was too severe; but Manchester was nowhere near that limit. As to the general position of Manchester, the Joint Committee had only such information as they could gather from the newspapers, and it appeared at present that the Corporation had no scheme before them. The Joint Committee were advised by Sir Henry Roscoe that if land could not be obtained for filtration, artificial filtration could be worked satisfactorily. Salford had adopted artificial filtration, and if Manchester could not get land they could follow the example set by Salford. In the circumstances the Sub-committee were of opinion that the Corporation should be informed that until they adopted some definite scheme to ensure the efficient treatment of the whole of the sewage the Joint Committee could not consent to any extension of the order of court.

The Chairman suggested that, instead of saying that Manchester had no sewage scheme, Mr. Killick should have said they had no improved scheme.

Mr. Killick asked what scheme the Manchester Corporation had at present.

The Chairman said he was referring to the precipitation scheme now in operation. He thought Mr. Killick had gone too far in saying that there was no scheme.

Mr. Killick said he meant that Manchester had no efficient scheme for the treatment of sewage.

Mr. Alderman M'Dougall explained the position of the Manchester Corporation. They had not yet adopted a scheme. A scheme for artificial filtration had been received with a good deal of favour. The experimental filters gave an excellent effluent, but it was found that their power rapidly diminished, and in view of the great cost of such a scheme, the Council had referred the matter back to the Committee. The cardinal point was how long the filters would continue to work. His own view was that the experiment had not been tried on a sufficiently large scale. An estimate had been prepared by the City Surveyor, on the basis of Sir Henry Roscoe's report, which showed that the cost of a scheme for artificial filtration would be £275,000, and that the filters would have to be renewed every three or four years, at a cost of £120,000. In consequence, the Culvert scheme was being more favourably considered.

The Chairman asked if the Corporation had considered whether they would be able to get permission to lay a culvert.

Mr. Alderman M'Dougall said that question was thoroughly gone into in the spring of the year.

Mr. Alderman Thompson said the Corporation were in a very difficult position, and should receive some sympathy from the Joint Committee. There were difficulties in the Council, and there were greater difficulties outside. He had been strongly in favour of an artificial filtration scheme, and there was no doubt that for a small district such a scheme worked admirably. But for a vast area like that of Manchester, where the quantity and the quality of the sewage was so irregular, it was doubtful whether the results would be so good. The estimated cost, moreover, was so alarming that it was a question whether it would not be better after all to go in for a scheme which would take the effluent down a tidal opening. He had some reason to think that if they put a clause in the Bill for such a scheme, binding themselves to treat the effluent in the best possible way, there would be little or no opposition. He hoped the Joint Committee would see their way to give the Corporation six months longer in which to prepare a scheme.

The Chairman admitted the difficulties Manchester had to encounter, but he thought three months would be a sufficient time in which to prepare a scheme. The Joint Committee were bound to treat Manchester in the way they had treated smaller places, but in view of the difficulties of the case, he was sure the Joint Committee were willing, as far as possible, to meet the wishes of the Corporation.

Mr. Killick pointed out that if an extension of six months were granted, it would mean that the Corporation would not be able to go to Parliament next session.

Mr. V. K. Armitage thought six months more was too much time to

give the Corporation. He knew no reason why the Corporation should not before this have made up its mind what it was going to do. He did not think the County Councils would oppose a culvert scheme if security were given for the proper treatment of the effluent. He was willing to give the Corporation three months more.

Mr. Killick then moved that an extension of three months be granted to Manchester.

Dr. Hewitt seconded, and the motion was adopted.

THE EXPLOSIVE HAIR-WASH FATALITY.

PROSECUTION OF HAIRDRESSERS

BEFORE Mr. Sheil, at Westminster Police-court, on Saturday, Mr. Louis Fradin, of 29, St. George's-place, Knightsbridge, and Mr. Frederick Chacutre, of 26, Sloane-street, S.W., Court hairdressers, were summoned by the London County Council, as the authority under the Petroleum Acts of 1871 and 1879, for storing a quantity of petroleum in a manner contrary to the regulations and without licence. Mr. Godfrey, who prosecuted for the County Council, said the proceedings were the outcome of the recent case of using explosive hair-wash by which a lady lost her life. In consequence of what transpired at the inquest, the County Council inspector had been visiting various hairdressing establishments at the West End, where this explosive wash had been used. It was only fair to the defendants to say they had discontinued its use since the accident. Persons who kept this explosive wash except as petroleum with the precautions required by the Act were liable to a penalty of £20. It had been ascertained that the flashing point of this wash was only 60°.

Mr. Sheil: It is inflammable at that low temperature.

Mr. Godfrey: As a matter of fact it will go off at a less degree than that. All petroleum of this sort must, according to the licence under the Act, be kept in stoppered bottles of only a pint capacity, and it must be for private use or for sale only. Using it as a hair-wash in a public place on customers' heads in exactly the same way as it was used in the case of the lady who lost her life was clearly an illegal proceeding.

Mr. Sheil agreed that it was neither private use nor sale. The only question would appear to be the penalty.

Mr. Godfrey said that as these were the first prosecutions a heavy penalty was not pressed for. Besides, defendants had discontinued the use of this terrible "antiseptic shampoo," as it was known in the trade.

Mr. Sheil: I should think that no one in their senses would allow this wash to be used after the revelation we have had.

Mr. Godfrey: I am sorry to say, sir, that a certain well-known firm at the West End actually commenced using this wash after this terrible accident because it was a source of great profit. They had never used it before the explosion.

After evidence had been given by Mr. Wade, one of the inspectors of the Council, as to finding the petroleum hair-wash in the basement of the first-named defendant's premises, Mr. Sheil asked Fradin whether he had a licence. Defendant: No.—Mr. Sheil: The penalty—£20 a day—is exceedingly heavy, and very properly so. However, I do not think you knew the regulations, but if this happens again the penalty will be very high indeed. I shall fine you 20s. and two guineas costs. [This is a merciful breach of the legal tenet *ignorantia juris non excusat*.—Ed. C.T.J.] In the case against Chaventre Mr. Godfrey stated that a gallon vessel was found containing half a gallon of the liquid. An ordinary cork was used, and the vessel was labelled "Antiseptic shampoo." Chaventre admitted that he had no licence, but added that he was not aware that it was petroleum or in any way a dangerous wash. Mr. Sheil made the penalty the same as in the first case—20s. and two guineas costs.

Seven other hairdressers were summoned, on Wednesday, by the County Council at Marlborough-street, London, for keeping a quantity of petroleum without licence, contrary to the Petroleum Acts of 1871 and 1879. Mr. Godfrey, who appeared on behalf of the County Council, said the County Council had issued a circular to hairdressers, but notwithstanding this, some were still using the dangerous liquid. There seemed to be an idea that they could use it in the absence of a light, but that was an erroneous impression, as it was not the light that ignited it, but the electricity caused by its manipulation with the hair. The Council desired it to be publicly known that the liquid could not be used, even when a fire or light was not present. The first summons to be dealt with was against Messrs. Emile and Co., in whose shop the accident referred to took place. Counsel, in reply to a question, said that the County Council were at the present time in recess, but when they met they would be advised by the officers not to grant licences for the use of the wash. Mr. Hannay fined Mr. Fuchs (of Emile and Co.) 60s., with two guineas costs. In the other six cases fines ranging from 20s. to 40s. were imposed.

Selected Correspondence.

EXPLOSIVE HAIR WASH.

(To the Editor of the Times.)

SIR,—The only difference of opinion that has arisen in connection with the painful case which has given rise to this discussion is on the point whether the ignition was caused by an electric spark or by some unsuspected and possibly distant flame. It is, of course, well known to all those who are in the habit of dealing with low boiling-point liquids giving off inflammable vapours—such, for example, as ether—that the presence of a naked flame, even at a distance of many yards, is attended with great danger. But in the present case I can entirely corroborate by personal experience the contention of Lord Kelvin in your issue of August and that an electric spark, although in itself feeble, is quite sufficient to ignite an explosive mixture of hydrocarbon vapour and air. Some years ago I was consulted by a manufacturer who had an extensive business in what is called the "dry cleaning" of wearing apparel. In this process the goods, previously well dried, are immersed in a vessel of benzine, in which they are kept in motion by means of mechanical stirrers. In spite of every precaution to ensure the absence of naked flames in the building in which the operation was conducted fires were constantly occurring, and at one time the process threatened to become a failure on account of this apparently spontaneous inflammability of the hydrocarbon vapour. It was only when the possibility of the generation of electricity and the passage of sparks was suggested that precautions were taken to exclude air from the upper portions of the vessels and that the process became practicable. Without going into technical details I may point out that the experience afforded by this process points most conclusively to the correctness of the electric spark theory of the ignition, and on this ground alone the use of such inflammable hydrocarbons for cleaning the hair—apart from the very doubtful question of their efficacy—should be absolutely condemned.—Yours obediently,

RAPHAEL MELDOLA.

PRACTICAL HINTS ON LIMESTONE ANALYSIS.

IN a paper on this subject published in the *Journal* of the Society of Chemical Industry, Mr. Sundstrom says that in manufacturing bicarbonate of soda the writer had to use limestone, varying in composition with every cart load, and it was therefore an imperative necessity to analyse it quickly and correctly. After many trials he is satisfied that the following methods give a correct result.

(A.) Weigh out two portions of 1 g. each of the finely powdered sample, transfer to small-sized basins, add to each about 100 cu. cm. distilled water. To one run in 25 cu. cm. normal HCl, cover with a watch glass, and allow to stand until all action ceases. Heat to boiling, cool and neutralize with normal NaOH, using a drop of methylorange as indicator. Cu. cm. HCl—cu. cm. NaOH=HCl required to saturate the carbonates of lime and magnesia.

(B.) To the other portion of 1 g. add cautiously 5 cu. cm. concentrated HCl, keeping the basin covered with a watch glass to prevent loss by spurring. After all effervescence has ceased, evaporate to complete dryness over a low flame. When dry, cool and take up with a little hot water and a few drops of concentrated HCl. Heat to boiling and filter through an ashless filter, being careful to wash all insoluble materials into the filter. Wash with boiling water until free from all trace of chlorides.

(C.) Dry the filter and contents and ignite in a platinum crucible to bright redness, cool under desiccator, and weigh for SiO_2 .

(D.) Neutralize the filtrate and washings from (B) with NH_4OH in slight excess. Heat to boiling, filter and wash the precipitate, if any, until free from chlorides. Dry at 110°C . and ignite; cool and weigh for Al_2O_3 and Fe_2O_3 .

(E.) Heat the filtrate and washings from (D) to boiling and add a concentrated solution of ammonium-oxalate, "also heated to boiling." Allow to stand until settled clear, which is done, if rightly treated, in two or three minutes; decant the clear solution into a filter and dissolve the precipitate in HCl and reprecipitate with NH_4OH . Allow to settle, decant as before, and then wash the whole precipitate into the filter and wash with hot water until free from chlorides and oxalates. Dry at 110°C . and ignite in a platinum crucible, at first cautiously, and then over a blast-lamp, until completely converted to CaO . Cool under a desiccator, weigh, and calculate per cent. CaCO_3 from weight of CaO .

To check results titrate the CaO with the normal HCl.

Divide percentage of CaO by 5 (= cu. cm. normal HCl required for CaCO_3); subtract the quotient from cu. cm. normal HCl required for (A) and multiply remainder with 4.2 per cent. of MgCO_3 .

For practical purposes this method can be recommended and it has been successfully used for the last two years, and in many instances the writer has been able to finish a complete analysis in two hours.

Legal Intelligence.

HIGH COURT OF JUSTICE.

QUEEN'S BENCH DIVISION.

(Before Mr. Justice Wills, without a jury.)

THE BADISCHE ANILIN AND SODA FABRIK V. LA SOCIÉTÉ CHIMIQUE DES USINES DU RHÔNE, ANCIENNEMENT GILLIARD P. MONNET ET CARTIER; AND JOHN D. WILSON.

This was an action brought by the Badische Anilin and Soda Fabrik, of Ludwigshafen, Rhine, Germany, against La Société Chimique des Usines du Rhône, anciennement Gilliard P. Monnet et Cartier, of Lyon, France; and John D. Wilson, of West End Works, Richmond Road, Bradford, Yorkshire, for an injunction restraining the defendants from importing into England, and manufacturing, selling, supplying or using in England, certain dyes sold by the defendants under the name of anisoline and tri-anisoline, and manufactured according to or in manner described in the specifications filed in pursuance of the plaintiffs' Letters Patent No. 15,374 of 1887 and No. 9,633 of 1892. Originally the substantial complaint of the plaintiffs was that the anisoline produced by the defendants was an infringement of the patent No. 15,374 of 1887, known as "the old rhodamine patent," or as "the master rhodamine patent," originally brought out and discovered by the Badische Company; and that the tri-anisoline produced by the defendants was an infringement of the patent No. 9,633 of 1892, known as the 6 G patent. The validity of the old rhodamine patent was admitted, and therefore the only question arising upon that patent was one of infringement; but the validity of the 6 G patent was disputed, the contention of the defendants being that the information given to the public under Monnet's specification 4,677 of 1892 was such that the invention of the Badische Company, which they patented at a later date, had been anticipated. At the trial, however, the plaintiffs admitted that as to the patent No. 15,374 of 1887, the complaint had been satisfactorily answered, and that judgment must be given for the defendants. During the trial the defendants, by amendment, allowed upon terms, raised an additional objection to the plaintiff's patent No. 9,633 of 1892—viz., that as to examples 2 and 3, therein given as illustrating the application of the invention to particular cases, the specification was insufficient. The trial of the action continued for 14 days, the evidence having been of the most highly technical character. The hearing was commenced on June 15 last, and was continued upon June 16, to the 29th, July 15, 15, August 2, 3, and 4, when judgment was reserved.

Mr. Justice Wills in finally giving his decision, read a most elaborate and exhaustive judgment. The learned judge said that, as it was admitted that judgment must be given for the defendants as to the patent No. 15,374 of 1887, all that followed related to the patent 9,633 of 1892. It was common ground that the patent 9,633 of 1892 dealt with dialkylated rhodamines, and with them only. If, therefore, Monnet's patent did not deal with dialkylated rhodamines there was a short answer to that objection. In the former action of "Monnet v. Beck" the same question arose, and he decided that the specification included all classes of rhodamines, dialkylated, unalkylated, and tetralkylated. He would only say that the reasons which led him to that conclusion in that case still appeared to him to be sound. He had therefore to abandon the prospect of taking a short cut, which would have relieved him from a singularly difficult task, and had to discuss the question of anticipation—first, as to process; secondly, as to products. As to process Monnet said, as clearly as if he had said it in so many words, "Whatever you do do not attempt my process on the unconverted rhodamine base. It will fail if you do so." The plaintiffs' patent took part two of Monnet, did exactly what Monnet said must not be done, and worked it out to perfect success. How could Monnet's patent be said to anticipate the plaintiff's process? Dr. Bernthsen, the real author of the plaintiff's patent, arrived at that startling result only because he made the discovery that the rhodamine base was itself capable of behaving as an acid. Surely there was enough both of discovery and invention to support a dozen patents. Secondly, as to products. He accepted the evidence of Dr. Bernthsen that at the plaintiff's works the rule was to pass nothing into trade which had more than 2 or 3 per cent. of impurity. There was no difference of opinion that Monnet's process would make an article containing 70 per cent. of pure anisoline and 30 per cent. of unconverted rhodamine—in other words, only 70 per cent. of 6G. The plaintiffs' product was pure anisoline, and seemed to him to be a substantially different product from anisoline with either 30 or 18 per cent. of foreign matter. The case of anticipation therefore failed. As to infringement, it appeared to him that the defendants infringed both as to process and as to product. As to product, it was not seriously argued that a substance which was known to be and recognised as a mixture of 18 per cent. of impurity with 82 per cent. of pure 6G was not an infringement. As to process, the whole

secret of the success of Dr. Bernthsen's invention was the making use of the rhodamine base as an acid for the purpose of obtaining esterification. This it was, and this alone, that enabled pure 6G to be made, and this also was undoubtedly the source of the success of the process adopted by the defendants. As to the objection of insufficiency of specification, it turned out that example 2 given by the plaintiffs required an iron autoclave for success. The explanation was that in the course of the reactions which took place within the autoclave hydrochloric acid was formed. Free hydrochloric acid interfered with the process. Now, if iron were present and in contact with the solution which contained the hydrochloric acid, it combined with the free hydrochloric acid and used it up, so to speak. The remaining and necessary reactions could then go on without interference, and success was obtained. Unless the specification really did contain a direction to use an iron instead of any other autoclave the directions were insufficient to enable 6G to be made. Iron was confessedly in example 2 indispensable as a factor in the process, and he did not see, with reference to this objection to example 2, how it was possible to uphold the patent, as iron was not mentioned or implied as a necessary contribution to the materials to be used. As to example 3 given by the plaintiffs, there was, in his opinion, no real difficulty in succeeding in an enamelled vessel. The result was that there would be judgment in the action for the defendants as to the patent No. 15,374 of 1887 upon the issue of infringement and upon the question of validity as to No. 9,633 of 1892 in respect of the particular objection of insufficiency so far as it related to example 2, and for the plaintiffs on all other issues. His Lordship granted a certificate that the objection of insufficiency in examples 1, 2, and 3 of the plaintiffs' patent was reasonable. Judgment for the plaintiffs on the issue as to infringement of the patent 9,633. All costs of and occasioned by adding the objection as to insufficiency and thrown away by reason of the amendment being made so late to be the plaintiffs'. Liberty to apply in Chambers. Certificate that the validity of the patent 9,633 of 1892 came into question. Certificate that the particulars of breaches in respect of 9,633 of 1892 were reasonable and proper. Costs on the higher scale.

RUNCORN COUNTY COURT.

(Before His Honour Judge Wynne Ffoulkes and Special Jury.)

GILBERT, DOBELL, AND SALT UNION, LTD., v. ANGLIER STEAMSHIP COMPANY.

SHIP CANAL AND THE SALT TRADE.

In this case the plaintiffs were Messrs. C. H. Gilbert and Co., merchants, Savannah, Messrs. Alfred Dobell and Co., their agents in Liverpool, and the Salt Union, Limited: and the defendants were the Anglier Steamship Co., London.

Mr. A. G. Steele (instructed by Messrs. Bateson, Warr, and Wimshurst) was for the plaintiffs, and the defendants were represented by Messrs. A. Bateson (instructed by Messrs. Weightman and Pedder).

Mr. Steele stated that on the 25th February, 1897, Messrs. Dobell and Co., of Liverpool, acting for Messrs. Gilbert, bought verbally from the Salt Union, Limited, a thousand tons of salt to be placed on board a vessel at Runcorn, which was to carry the salt to the principals at Savannah. For this purpose Messrs. Dobell engaged from the defendants the steamship *Ethiophe*, and the defendants agreed to give Messrs. Dobell two working days' notice when the *Ethiophe* would be ready at Runcorn lay-by to receive the salt. Notice was given that the ship would be ready on March 16; but, however, it was not ready for twelve days later, and the flats were kept waiting. For this detention the claim of £50. was made. A voluminous correspondence was here read, and his Honour failed to see that there was any contract between the defendants and the Salt Union, Limited, and the Salt Union were accordingly struck out of the plaint.

Thomas Warlow, manager for Messrs. Verdin Bros., a branch of the Salt Union, Limited, said that he arranged with Messrs. Dobell and Co. for the sale of a thousand tons of salt on the 25th February. It was further arranged that Messrs. Verdin should receive two days' notice when the ship was ready to receive cargo. On Friday, the 12th March, they received a note from Messrs. Dobell that the steamer would be ready to load on Monday, or certainly on Tuesday. Witness explained that the demurrage would be charged against Verdin Bros.' agency in the accounts. The amount would be £70. 10s. Charles Shepherd, manager of the salt department of Messrs. Dobell and Co., spoke as to the purchase of the salt, and said Verdin Bros. had intimated to him that they held Messrs. Dobell responsible for the damage. The *Ethiophe* was not ready to receive the cargo owing to an accident.

His Honour asked Mr. Bateson what he had to say as to his client giving notice that the ship would be ready to load on the 15th March, whereas she was not ready until the 27th March.

Mr. Bateson said the shipowner was only bound to give notice when the ship would be ready.

Mr. Bateson then addressed the jury, and said the *Ethiophe* was in Manchester. She was put in dry dock for the purpose of having her bottom painted, when it was discovered that there was a flaw in the tail end of the shaft. It was condemned, and a new one was supplied with the utmost despatch. She was ready to load on the 24th March, but as there was a strong wind blowing the Ship Canal officials refused to allow her to leave dock. The ship left on the Friday, and loading began on the 27th, and was finished in three days. The only obligation on the shipowners was to take this salt within a reasonable time, and he contended that under the circumstances they had done so. He further argued that the bill of lading absolved them from all loss accruing through the broken shaft.

His Honour, in directing the jury, said the defendants, when they gave notice to load, assumed that the ship was ready to go on her voyage, but a latent defect was found in her propeller, and when a new propeller was fixed the ship was delayed two days through stress of weather. The question for the jury to decide was whether there was unreasonable delay in receiving the cargo on the part of the defendants under the circumstances.

Mr. Steele submitted that the ship was not protected for any delay by any exception in the contract or the bill of lading.

His Honour asked, in a contract of this kind, were they bound—he could not think they were—by causes over which they had no control? He was submitting to the jury whether the ship was sent to Runcorn lay-by in an unreasonable time under the circumstances.

Mr. Steele said the defendants had to fulfil the contract. It was their misfortune that they could not get the ship there in time.

His Honour said a contract of this kind must be construed reasonably. If circumstances over which the defendants had no control prevented the performance of the contract, the contract was not so absolute that the defendants were not entitled to protect themselves by urging those circumstances to the jury. If there was unreasonable delay under the circumstances, the plaintiffs were entitled to damages for the delay of the flats and wages of the men. If the delay was not unreasonable the defendants were entitled to a verdict.

The jury returned a verdict for the plaintiffs for £30. with costs. His Honour allowed the defendants costs against the Salt Union, Ltd.

MONOPOLIES IN SPAIN.

SALT ABANDONED.—EXPLOSIVES.—PETROLEUM.

AS the Spanish budget for 1896-97 is to be continued during the year 1897-98, it is advisable to examine closely the alterations to which it was subjected in the Cortes before being allowed to pass.

Salt.—The two principal modifications in the ordinary budget are the suppression of the monopoly on salt, which had been calculated to produce £320,000., and the reduction in the estimated revenue from sugar by a sum of £31,200.

As a partial compensation for the loss of revenue from the abandonment of the salt monopoly, the tax on articles of consumption was increased as regards salt from 25c. to 50c. per head of the population, giving a total of £160,000. from salt, in addition to which the suppression of the monopoly was expected to result in a further increase of £12,000. from the salt mines of Torrevieja.

Explosives.—The Government is also empowered to invite tenders for the exclusive sale of gunpowder and explosives in the Peninsula and the adjacent islands on the following basis:—The term is fixed at 20 years, and the lowest tender is to be £120,000. per annum, payable quarterly. The Government can raise a loan guaranteed by this monopoly, which is to yield a sum of not less than £640,000., bearing interest at 5 per cent., with annual drawings during the last 16 years of the contract. The Spanish Union of Bilbao has offered 3,024,000 pesetas, and contracted to issue a loan of 18,000,000 pesetas. The cabinet have practically accepted the terms. It was the only offer.

Petroleum.—The exclusive right of importing, exporting, refining, and sale of petroleum and other mineral oils in Spain, the Balearic Islands, and Spanish possessions in Africa, was to be offered, in the first instance, to the Association of Petroleum Refiners, already established since 1895, and if declined by them tenders were to be invited. The monopoly will shortly be offered by tender, and from this the Government hopes to get a loan of 40,000,000 pesetas and an annual payment of 15,000,000 pesetas.

MANGANESE EXPORTS FROM HUELVA.—Messrs. Sundheim and Doetsch report the following shipments of manganese ore from Huelva for the first half of 1897:—

	Metric Tons.
To Germany	—
„ Great Britain	1,865
„ France	1,450
„ Belgium and Luxemburg	49,937

Total 53,252
14,819 tons, or 27.82 per cent. of the total, were exported by Messrs. Sundheim and Doetsch.

EXPORTS OF ALKALI AND BLEACH.

THE following returns, which are taken from the official foreign and colonial statistics of the United Kingdom, give the amount and value of alkali and bleaching materials shipped to the undermentioned countries for the month of June, 1897, as compared with the same month of 1896:—

ALKALI.				
Port.	1896.	1897.	1896.	1897.
	Cwts.	Cwts.	£	£
Russia	19,887	19,326	6,322	5,231
Sweden and Norway	12,198	15,841	2,490	3,022
Germany	11,073	16,122	3,170	3,643
Holland	12,877	11,441	2,233	1,979
France	4,815	3,448	1,699	1,197
Spain and Canaries	31,261	32,498	10,731	10,579
Italy	19,974	18,336	5,500	5,331
United States	144,016	197,940	31,934	45,870
Australasia	17,694	10,237	5,843	3,530
British North America ..	11,993	13,514	2,989	3,638
Other countries	82,660	101,843	22,072	28,512
Total	368,448	440,186	94,983	112,532
BLEACHING POWDER, ETC.				
Port.	1896.	1897.	1896.	1897.
	Cwts.	Cwts.	£	£
United States	58,053	69,036	19,597	21,546
Other countries	44,319	26,922	14,702	8,452
Total	102,372	95,958	34,299	29,998

EXPORTS OF PETROLEUM FROM U.S.A.

THE Chief of the Bureau of Statistics, Washington, gives the following returns of the exports of petroleum and petroleum products for May, 1897. The total shipments were 84,714,994 gallons, compared with 84,562,853 gallons in 1896. The total for the eleven months ending May, 1897, was 867,354,421 gallons, against 801,237,166 gallons during the same period in 1896. The details of the shipments are as follow:—

CRUDE PETROLEUM.		Gallons.
Total, May, 1897		8,780,025
" " 1896		12,556,982
NAPHTHAS.		
Total, May, 1897		615,536
" " 1896		615,636
ILLUMINATING.		
Total, May, 1897		70,291,809
" " 1896		67,407,731
LUBRICATING AND PARAFFIN.		
Total, May, 1897		3,590,021
" " 1896		3,982,252
RESIDUUM.		
Total, May, 1897		1,437,576
" " 1896		252

FATAL FIRE AT A TAR WORKS.

THE inquiry into the death of George Lacey, stillman, aged 57 years, of Crew's Hole, St. George, Bristol, who died from injuries received at the fire at Messrs. W. Butler and Son's tar and resin distillery, Crew's Hole, on July 31st, was resumed on Tuesday by Mr. H. G. Doggett, at the Crown and Dove Hotel, Bridewell Street.

Mr. Joseph Beaumont Butler, a member of the firm, said he managed the works at Crew's Hole. The deceased was engaged in making resin varnish at the time of the accident. This varnish was made in a shed covered with galvanised iron, and was made in a copper boiler. The fire was underneath the boiler, and a circular flue ran round the boiler before passing upwards. The stove-hole was outside the shed. The varnish was made of resin, resin-oil, and benzoline. The boiler in which the varnish was made was of the capacity of 280 gallons. About 10 cwt. of resin was first melted in the pot, and then the resin oil (about 5 cwt.) was added while the resin was in a molten state. The fire was then withdrawn from the furnace and the mixture allowed to cool for several hours to a temperature of about 120°F., and then the benzoline was added. The benzoline was gradually poured into the boiler, while

another man stirred the varnish. A cover was next placed over the boiler, and the varnish allowed to cool and then bottled. This varnish had been made by them for about two years. The deceased had been accustomed to make varnish for the last 20 years. Iles, who worked with him, had also made varnish for many years. About half-past twelve witness noticed smoke coming over the office roof. He ran out of the office and saw the deceased and Iles, who had just come from the shed. The men were badly burned, and witness had them conveyed to the Infirmary. He found the shed all on fire. In reply to Mr. Maitland, witness said that the varnish was used for coating ships' masts, spars, and for anything where a cheap varnish was required. The varnish was a fairly quick dryer, the benzoline being used for this end. After the benzoline was added to the varnish a vapour was given off. There were no ventilators or openings in the roof of the shed. The Saturday was a very hot day, and the iron roof would have been very hot. On hot days more vapour would probably be given off. Witness did not think the amount of heat generated by the sun on the roof would have been enough to have caused an explosion. He had never noticed any openings between the varnish shed and the fire shed. If some of the benzoline ran over the side of the boiler and on to the hot brick work of the flue it was possible that the vapour might have become ignited in that way. Witness thought this was probably the cause of the fire. In reply to Mr. Gore, witness said that if the resin was heated slowly it would liquefy in about three or four hours at a temperature under that of boiling water. If heated rapidly, it would require a higher temperature and take about one and a half hours. The resin oil used was a heavy resin spirit or a light resin oil. The process of making the varnish would usually be completed in a day. Witness had never gone to the shed with the sole purpose of making a minute examination of it, but the workmen in charge of the different departments should at once report when anything was wrong. The deceased was in charge of the varnish room. No chemist or other expert was employed to advise them. The deceased had worked from 6 a.m. on Friday morning till the time of the accident on Saturday, with an hour for rest and intervals for refreshments. The men worked in three shifts a week of 32 hours each.

Mr. Maitland, Her Majesty's Inspector of Factories, said that he had visited the shed, and he thought it advisable that ventilators should be placed in the roof of the shed. From what he had heard he thought that if there had been ventilators the vapour would not have accumulated, and probably the explosion would not have occurred. He would also recommend that the holes between the boiler-house and the varnish-shed should be closed up, and also that Messrs. Butler and Son should appoint someone whose duty it should be to look after the buildings and see that they were in a proper state of repair, and with no holes in the walls. The jury returned a verdict of "Accidental death," adding that they were of the opinion that Mr. Maitland's suggestions should be carried out. Mr. Tuckey, on behalf of Messrs. Butler and Son, said that these recommendations should be carried out.

Trade Notes.

THE U.S.A. DUTY ON CHARCOAL.—It was discovered in the Appraiser's office, New York, last week, that charcoal had been omitted from the Dingley tariff. Acting under authority given in section 8, of the administrative part of the law, Appraiser Wakeman ruled that it was dutiable at 20% *ad valorem*.

DEATH FROM WOOLSORTERS' DISEASE.—The Bradford City Coroner held a prolonged inquiry, this week, into the death of Mary Jane Snowden (28), woolsorter, employed by Messrs. Raol, Benn, and Co. The jury found that the woman died from woolsorters' disease, contracted probably through the diminution of draught caused by the construction of a box to confine the dust from the sorting screen, and expressed the opinion that certain breaches of the new woolsorting regulations did not amount to culpable and criminal negligence. This is believed to be only the second case of a woman dying from this disease since it has been known in England.

EXPLOSIVES AND THE U.S.A. TARIFF.—Manufacturers of chemicals used in the production of explosives will, no doubt, find the new law specially important as relating to their industry, as the Government has frequently passed special laws with regard to the free admission of munitions of war or products employed in their manufacture. At the time of the Chilian war scare an act was passed admitting free of duty smokeless and other powders, nitro-glycerine, etc., and while probably it was the intent of Congress that this law would apply only to purchases made under the emergency appropriation at that time passed by both houses, yet for a considerable length of time thereafter the provision was construed as general in its character, and as applying to all Government purchases. It was finally superseded by the Wilson Act, which enabled the Government to import merchandise, and in turn now gives place to the Dingley act, under which duty must be paid, even though the general Government be the consignee.

A SUCCESSFUL TRADE MARK APPEAL.—In the Chancery Division, on Tuesday, before Mr. Justice Kekewich, an appeal of Messrs. Kynoch and Co., Limited, was heard from the refusal of the Controller of Trade-marks to register as a trademark the word "Kynite" for explosives. After hearing the arguments of counsel, his lordship thought that the registrar had perhaps been a little over-zealous in this matter, and directed the word to be registered.

THE "X" RAYS AGAIN.—There is apparently no end to the capabilities of the "X" rays. They are now used as an incentive to fowls to do their duty, and a sure means of finding out the lazy and slothful egg-layers. A farmer with a large quantity of poultry found, after carefully compiling statistics, that the number of eggs produced was not so great as it ought to be, and he computed that at least one-fifth of the birds were either sluggards or useless. Accordingly the Röntgen rays were called into requisition, and a preliminary examination of twelve hens showed that eight were egg-producers and four were not. An "X" ray plant was then permanently established, and all the hens were subjected to a searching examination at the rate of thirty per hour. This put the birds on their best behaviour, and the result was a decided increase of eggs. The non-producers were ruthlessly plucked and sent to market.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols, if anything, are a shade easier, both 90's and 50/90's standing at 2s. Carboic acids are steady but quiet. Crude 60% may be quoted as 2s., but values are for the most part nominal. Crystals and liquid are unchanged. Naphthas are steady, with solvent at 1s. 7d. and crude 11d. Creosote oils are firm. Anthracene medium. Pitch weak, 17s. 6d. to 20s. 6d. f.o.b. East coast. The market generally is flat.

Sulphate of ammonia keeps fairly steady, with a moderate demand. There has been a tendency towards a decline in values during the week, but the market seems to have closed steady at £7. 7s. 6d. for Beckton. London outside makes, £7. 8s. 9d. to £7. 10s. Liverpool £7. 11s. 3d., Hull £7. 10s., and Leith £7. 8s. 9d. to £7. 10s.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade a steady amount of business continues to be done in all the main products, demand being good for export, and better for home trade. Caustic soda is firm—values are unchanged, and current quotations stand as for some time past, viz., f.o.b. Liverpool, 77%, £8. 15s.; 74%, £8.; 70%, £7. 2s. 6d.; 60%, £6. 2s. 6d., nett, per ton. Ammonia alkali, £3. 17s. 6d., bags, f.o.r. makers' works, but some small resales at slightly lower rates. Bleaching powder is in strong request for export, and price firm at £6. 7s. 6d. f.o.r., and £6. 12s. 6d. f.o.b. Liverpool—on the Tyne, prices are £6. 5s. to £6. 10s. f.o.b. Chlorates unchanged—potash at 4d. and soda 4½d. Bicarbonate of soda and soda crystals are maintained at the old rate, and there is a fairly good inquiry. Sulphate of copper £15. 15s. to £16. f.o.b. In vitriol and muriatic acids the bulk of business is rather smaller, and prices are unchanged. White powdered arsenic a stronger market, at £22. f.o.r. Potash, caustic and carbonate, steady in price, with fair demand both for prompt and forward delivery. Prussiate of potash firm, at 5¼d. per lb. Acetate of lime, brown, £4. 15s. to £4. 17s. 6d., c.i.f., but quiet. Acetates generally dull. Sulphur, best quality, £4. 12s. 6d., f.o.r. For carboic acid, crystal and liquid, the demand is slack, and prices are slightly weaker. Aniline oil and salt remain steady, at 7½d. and 7d. per lb. respectively. There is a larger demand for sulphate of iron, and the lessened supply makes price firmer. Sulphocyanides quiet. Demand for chemicals generally is still, only slack in all large industrial centres.

REPORT ON MANURE MATERIAL.

The market continues very quiet in all departments. The quotation for 75/80 Florida rock remains at 5½d. per unit, but with order for a good line something less would probably be accepted. The quotation for South Carolina River and 58/63 Algerian rock is 4¾d. per unit, but sellers are inclined to be rather firmer, owing to the hardening tendency of freights. There is very little doing in East Indian bone meal, and the nearest value on spot is probably £3. 10s. per ton—for shipment £3. 11s. 3d. per ton would have to be paid. Nitrate of soda remains dull at 7s. 4½d. for ordinary and 7s. 6d. per cwt. for fine quality, on spot. In the forward position there is still very little interest, although there are sellers at equal to 7s. 6d. per cwt. at Continental ports.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron. Scotch warrants closed at 44s. 9½d.; Middlesbro', 40s. 8d. cash; and hematite, 47s. 7d. Copper quiet: Chili bars, G.O.B.'s and G.M.B.'s, closed at £48. 2s. 6d. to £48. 7s. 6d. cash, and £48. 10s. to £48. 15s. three months. Tin steady: Straits closed at £61. 13s. 9d. to £62. 3s. 9d. cash, and £62. 3s. 9d. to £62. 13s. 9d. three months; Australian, £62. 7s. 6d. English ingots, £65. 7s. 6d. Lead steady: Spanish, £12. 11s. 3d. English, £12. 15s. Silesian spelter, ordinary, £17. 1s. 3d. Nickel, 1s. 2½d. Antimony, £29. 10s. to £30. Quicksilver: First hands, £7. 5s.; second hands, £7. 2s. 6d. Copper shares quiet: Cape 2¾ to 2½; Copiapo, 2½ to 2¼; Libiola, 2½ to 2¼; Mason and Barry, 2¾ to 3; Rio Tinto, 22½ to 22¼; Tharsis, 5½ to 5¾.

GLASGOW, WEDNESDAY.—Market strong, and a good business. Scotch done at 44s. 8d., 44s. 11d., and 44s. 10d. cash; also at 44s. 10d., 45s. 0½d., and 45s. one month; buyers, 44s. 9½d. cash; sellers, 44s. 10d. cash. Cleveland done at 40s. 8. cash; buyers, 40s. 8d. cash; sellers, 0½d. dearer. Cumberland hematite done at 47s. 8½d. cash, and 47s. 9½d. one month; buyers, 47s. 7d. cash; sellers, 0½d. higher. Middlesbrough hematite done at 50s. cash; buyers, 49s. 9d. cash; sellers, 50s.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil has received a check. Prices remain fairly steady, but there are but few sales, the market being quiet. Olive keeps firm at advancing prices, there being a good business passing. The firm tone that has characterised linseed still prevails, holders being steady at 17s. 6d. to 18s. per cwt. for Liverpool makes in export casks. Cottonseed shows an advance of 10s. per ton, Liverpool makes being very steady at 16s. 6d. to £1. per cwt. Castor oil is firm, but is not selling very freely—good seconds Calcutta are quoted 3½d. to 3¾d. per lb., which prices also apply to first pressure French; Madras stands at 3½d. per lb. There is nothing fresh to report about tallow. Resin is in fairly good demand, and prices are unaltered. Spirits of turpentine are firm on spot at 21s. 6d. per cwt., with a fair demand. Petroleum is quoted 5¼d. to 7d. for American and 5¼d. per gallon for Russian refined.

CAKES.—The market is firm. West American linseeds show an advance of 2s. 6d., a good trade having been done at £5. 12s. 6d. to £5. 17s. 6d. Liverpool makes have been moving fairly well at £6. 12s. 6d. to £7. per ton. The sparsity of American decorticated cottonseeds has risen values to £5. 7s. 6d. to £5. 15s., as in quality. Liverpool makes stand at £5. 17s. 6d. to £6. 10s., and undecorticated £3. 10s. to £4. 5s. Egyptians are quiet on spot at £3. 10s. per ton.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire—common £10., medium £12., best £15.; Derbyshire—common 40s., medium 50s., best 60s.; Welsh—best 90s., seconds 50s., and common 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead: £16. Red lead unchanged. Venetian red: £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide: £22. 10s. to £25.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

The mineral oil companies of Scotland have been holding private meetings over the serious question of the market position of burning oils and solid paraffins for the approaching new season, but no decision has been come to as yet. The settlement is proving a matter of difficulty and delicacy, not only because of the open antagonism of the foreign producers, but owing, also, to differences of opinion amongst the confederated native producers themselves. A further meeting is in train for this week, but it is not likely to be final in its results. The burning oil and solid paraffin prices given below are those of the past season. There are no purchases, and there will be none until the present negotiations come to a close. Sulphate of ammonia was done last week slightly lower, but it is fairly firm again at £7. 10s. prompt Leith; no forward dealing. The improved feeling in ordinary chemicals continues. Sulphate of copper shows a small recovery.

Chief prices current are:—Soda crystals, £2. 12s. 6d., nett, Tyne, soda ash, 48/62°, £4. 2s. 6d. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £5. to £5. 5s. nett, Glasgow; caustic soda, white, 70/72°, £7. 2s. 6d., 60/62° £6. 2s. 6d., and cream 60/62° £6., all nett, Liverpool; bleaching powder, 35/37°, £6. 10s. nett, Tyne; saltcake, 19s. to 20s.; borax, English, refined, £14. 15s. and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for Scotch and English deliveries (for export, 3¾d. nett, f.o.b. Glasgow); chlorate of potash, 3¾d. to 4d. less 5%, any port; nitrate of

soda, 7s. 6d. to 7s. 9d.; sulphate of ammonia, £7. 10s., prompt, f.o.b. Leith; salammoniac, first and second white, £33. and £31. nett any port; sulphate of copper, £16., less 5% Liverpool; paraffin scale, hard, 1½d. to 1¾d., and soft, 1½d. per lb.; paraffin wax, 120° semi-refined, 1¾d. to 2d. per lb.; paraffin spirit (naphtha), 6½d. per gallon; paraffin oil (burning), No. 1, 6½d., and crystal, 6½d., at Glasgow and other big centres, for Scotch buyers (English sales ½d. to ¾d. lower); ditto (lubricating) 86s. £5. to £5. 5s., 88s. £5. 15s. to £6. 5s., and 89s/89s £6. 10s. to £7. Week's imports of sugar at Greenock were 101,992 mats, and 2,851 baskets cane unrefined.

TYNE CHEMICAL REPORT.

TUESDAY.

There is nothing new to report in the Chemical market, and the demand for export is only quiet. Soda crystals are quoted at £2. 12s. 6d. per ton, gross weight, local consumption; sulphur firmer at £5. per ton; caustic, 76/77%, £9., and 70%, £7. 10s. per ton. Prices generally unaltered.

Bleaching powder, softs, £6. 10s. per ton, nett; hards, £6. 15s. per ton, nett; caustic soda, 76/77%, £9. per ton, nett; do., 70%, £7. 10s. per ton, nett; recovered sulphur, 2 cwt. bags, £5. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. 6d. per ton, nett; do., 52%, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95% crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham salt is firm at 9s. 6d. per ton. f.o.b. Tees.

COALS.—Trade is exceptionally firm, with a steady demand. Coke is also in excellent demand, and the exports are much above those usual at this time of the year. Best Northumbrian steam, 8s. 9d. to 9s. per ton; second qualities, 7s. 9d. to 8s. per ton; small steam, 3s. 9d. to 4s. per ton; gas coals, quiet, 7s. 3d. to 7s. 9d. per ton; bunker coals, 7s. 6d. to 8s. per ton; coke, firm, 20s. to 21s.

New Companies.

Invicta Asbestos Co., Ltd.—CAPITAL £3,000., in £1 shares (1,000 preference), to adopt an agreement with J. R. Green, and to carry on the business of asbestos miners, manufacturers, and merchants. The number of directors is not to be less than two nor more than five; the first are G. Watson and J. R. Green; qualification, £50.; remuneration as fixed by the company. Registered office, 4, New London-st., E.C.

British Drying Co., Ltd.—CAPITAL £85,000., in £1. shares. This company has been formed to acquire the patent rights of H. Hencke and R. Cunliffe, to adopt a certain agreement, and to carry on the business of driers of all kinds of materials for food, litter, and other purposes, chemical manufacturers, manure merchants, etc. The subscribers to the memorandum of association are:—H. Winckler, 110, Cannon-street, E.C., merchant; J. S. Garner, Stanley Mount, Brooklands, Cheshire, accountant; F. St. H. Tracy, 116, Queen's-gate, S.W., gentleman; A. Morgan, 64, Albert Hall Mansions, Kensington, S.W., gentleman; H. N. Miers, J.P., Swansea; W. H. Woodward, 12, Victoria, Feltham, Middlesex, accountant; H. Pouttery, 76, Drayton Park, Highbury, N., clerk.

Gerona Copper Co., Ltd.—CAPITAL £50,000., in shares of £4. This company has been formed to acquire, develop, and work the mining rights or property known as the Pura Manolin, Don Rafael, and Dona Trinidad Copper Mines in Spain, and to adopt an agreement with L. Delannoy. The subscribers to the memorandum of association are:—J. Bennett, 6, Drapers-gardens, E.C., engineer; L. Delannoy, 68, Calle Trafalgar, Barcelona, Spain, engineer; A. Baron d'Avernas Salvador, 2, Rue Blanche, Paris; H. Benham, Queen Anne's Mansions, S.W., gentleman; G. G. Blackwell, jun., 101, Leadenhall-street, E.C., merchant; R. Telfer, 21, Billiter-street, E.C., secretary; H. A. Mabey, 41, Saltoun-road, Brixton, S.W., writer. Registered office, 3, Clement's-lane, E.C.

H. H. Vivian and Co., Ltd.—CAPITAL £140,000., in £1. shares (24,000 preference). This company has been formed to acquire and carry on the business carried on by H. H. Vivian and Co., Ltd. (in liquidation), at Hafod-Isha Nickel and Cobalt Works, Swansea, as nickel and cobalt smelters, at Ikfield Port-road, Birmingham, as German silver, brass, and copper wire manufacturers, and at George-street, Birmingham, as German silver dealers, platers, and stampers, and to adopt a certain agreement. The subscribers to the memorandum of association are:—T. Lea, Bart., M.P., Kidderminster; W. G. Lloyd, Heywood, Maidenhead, engineer; R. W. Lindsay, Barford, Warwick, gentleman; A. S. Merry, West Cross, Swansea, metallurgist; A. F. Eden, 32, George-road, Birmingham, manager; R. L. Lidgley, 9, Queen-street Place, E.C., secretary; F. W. Mitchell, 9, Queen-street Place, E.C., clerk.

IMPORTS OF CHEMICAL PRODUCTS

AT
THE PRINCIPAL PORTS OF THE UNITED KINGDOM

LONDON.

Week ending July 31st.

Acetic Acid—	Germany, 39 pks.	R. G. Hall & Co.
	Holland, 105	A. & M. Zimmermann
	30 pks.	J. Owen
Acetone—	Germany, 5 cks.	Matthews & Luff
	Holland, 1 dm.	G. Rahn & Co.
Alkali—	France, 143 c.	J. Barber & Co.
	Germany, 35	Spies, Brs. & Co.
	Belgium, 24	T. H. Lee
	Germany, 200	B. & F. Wf. Co.
Alum—	Germany, 13 cks.	Ohlenschlager Brs.
	Holland, 45	"
Ammonia—	Belgium, 6 brls.	D. C. Thomas & Sons
Antimony Ore—	A. Turkey, 100 t.	H. Grey, jun.
	Italy, 50	Norrellit & Co.
Asbestos—	Italy, £200	W. Byford
	" 85	Brit. Asbestos Co.
	" 200	Pickford & Co.
	Canada, 132	W. Byford
	Germany, 20	Craven & Co.
	Italy, 26	London Asbestos Co.
Barytes—	Holland, 44 cks.	J. L. Lyon & Co.
	" 395	W. Harrison & Co.
	Belgium, 132 brls.	J. L. Lyon & Co.
	" 39	" 21
	Holland, 88	Harrison & Co. Taylor Brs.
Bromide of Iron—	Germany, 10 cks.	A. & M. Zimmermann
Camphor—	China, 300 cs.	City Coml. Wf.
	Hong Kong 130	R. Warner & Co.
	" 5	66 tubs Lewis & Peat
	" 5	S. Figgis & Co.
Caoutchouc—	Holland, 5 pks.	Domeier & Co.
	Zanzibar, 17 c.	Rogers Brs.
	France, 42	H. Johnson & Sons
	Aden, 17	Wallace Brs.
	E. C. Africa, 6	Forbes, Forbes & Co.
	Penang, 684	E. Boustead & Co.
	Germany, 10	F. Huth & Co.
	Zanzibar, 38	L. & I. D. Jt. Co.
	E. Indies, 1½	J. Peet & Co.
	Belgium, 6	Rosenberg, Loewe & Co.
	Rangoon, 240	L. & I. D. Jt. Co.
	" 47	Mohr Brs. & Co.
	U. States, 100	Prop. Bull Wf
Castor Oil—	France, 24 pks.	Beresford & Co.
	" 26	F. Boehm
	Italy, 10 cs.	L. & N. W. Rly.
	" 1	French Flint Bottle Co.
	" 20	A. & M. Zimmermann
	France, 10 brls.	Anderson, Weber & Smith
	Italy, 10	A. Laming & Co.

Chemicals (otherwise undescribed)

Holland, £16	T. H. Lee
France, 160	Mory & Co.
Belgium, 4	G. Kahler & Co.
" 40	John Cockerill Line
" 40	H. Bath & Son
Holland, 30	Type & King
" 5	A. & M. Zimmermann
" 14	Phillips & Graves
Germany, 60	L. & I. D. Jt. Co.
N. Zealand, 35	"
Germany, 60	H. Lambert
" 15	Petri Brs.
" 633	T. H. Lee
" 1,385	A. & M. Zimmermann
Belgium, 35	Leach & Co.
Holland, 6 cks.	G. Rahn & Co.

Citrate of Lime—

Italy, 22 cks.	Thames S. T. & L. Co.
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Citric Acid—

Germany, 20 pks.	A. & M. Zimmermann
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Cobalt Ore—

Sydney, 52 t.	Hore & Scrivener
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Cream of Tartar—

Portugal, 5 cks.	B. & F. Wf. Co.
Spain, 5	"
Italy, 10	Fellows, Morton & Co.
France, 15	B. & F. Wf. Co.
" 5	M. Ashby, Ltd.
" 5	F. C. Devon & Co.
Portugal, 10	F. Knowles & Co.

Dextrine—

Germany, 63 bgs.	Pronk, Davis & Co.
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Dyestuffs—

Aniline		
Holland, 4 pks.	L. C. & D. Rly.	
Argols		
Italy, 535 bgs.	B. Jacob & Sons	
" 60 cks.	Thames S. T. & L. Co.	
Cochineal		
Canaries, 4 bgs.	W. M. Smith & Sons	
" 46	Sperling & Williams	
Cutch		
Rangoon, 600 bxs.	Brown & Elmslie	
Diyl Diyl		
Ceylon, 8 bgs.	Culverwell, Brooks & Co.	
E. Indies, 98	Walker, Munzie & Co.	
Extracts		
France, 200 bxs.	Bennett S. S. Co.	
U. States, 125 cs.	Skillbeck Brs.	
Denmark, 3 cks.	M. D. Co.	
" 1	Tegner, Price & Co.	
Gambler		
Singapore, 472 tls.	J. W. Cook & Co.	
" 916	Brinkmann & Co.	
" 480	Hendrey & Martin	
" 223	J. Greig	
" 254 bgs.	Prop. Hay's	
" 881 pks.	Wf. Haller	
" 227 tls.	S. Figgis & Co.	
" 2,702	Adamson, Gilfillan & Co.	
Indigo		
E. Indies, 22 chts.	L. & I. D. Jt. Co.	
" 57	R. Von Glehn & Sons	
" 7	J. Owen	
" 8	G. S. N. Co.	

25 J. W. Cook & Co.	Manganese Ore—	Tar—	Luguna de Terminos, 105	Skelton & Schofield
9 Laughland, Mackay & Co.	Germany, 1 t. J. Barber & Co.	N. Russia, 1,543 brls. W. F. Malcolm & Co.	Port Liberte (Hayti) 480	Nottecohen & Co.
13 Myrabolams	A. Turkey, 250 Enbea, 820	Ultramarine—	Glucose—	
E. Indies, 2,733 bgs. W. Shielcott	Manure—	Holland, 3 pks. 9 cs. J. Barber & Co.	New York, 250 brls.	
1,000 pkts. J. Greig	Aden, 4 t. Culverwell, Brooks, & Co.	" 9 11 W. Harrison & Co.	Boston, 150	
1,000 pkts. Fleming's Oil & Chemical Co.	" 35 F. J. Cornwell, Son, & Co.	Yarnish—	Glue—	
Naphthaline	Methyl Alcohol—	Germany, 2 pks. Drolenvaux & Co.	Stettin, 84 bskts. N. Johansen & Dahl	
Germany, 16 cks. Fleming's Oil & Chemical Co.	Germany, 10 dms. Lister & Biggs	Belgium, 1 T. H. Lee	Rotterdam, 2 bls. 108 bgs. 2 cs.	
Saffron	Mica—	U States, 4 L. & I. D. Jt. Co.	Guano—	
Spain, 1 cs. Richardson, Spence & Co.	E. Indies, £255 W. M. Smith & Sons	Verdigris—	B. Ayres, 672 bgs.	
Snumac	Molasses—	France, 2 cks. B. & F. Wf. Co. H. Lorenz	Iodine—	
Italy, 100 bgs. Colthurst & Harding	Egypt, 201 cks. 1,000 c. Vokins & Co.	White Lead—	Valparaiso, 40 brls. A Gibbs & Son	
Tanners' Bark	B.W.I., 150 1,800 Cooperage Wf. Co.	Belgium, 46 cks. T. & W. Farmiloe, Ltd.	Limestone—	
Adelaide 100 t. J. Greig	U. States, 50 300 W. Balchin	Germany, 18 N. J. Fenner & Co.	Antwerp, 4 cs. J. T. Fletcher & Co.	
160 Deering & Robottom	" 1,349 8,448 J. R. Francis & Co.	" 22 A. Zumbeck & Co.	Manganese—	
" 162 Dyster, Nalder & Co.	Ochre—	" 20 Randall Brs.	Coquimbo, 1,425 t.	
92 A. & W. Nesbitt	Egypt, 285 sks. Devon & Co.	" 57 Spies Brs. & Co.	Mica—	
N. Zealand, 9 G. N. Souratt & Co.	Holland, 42 pks. 4 cs. Phillips & Graves	France, 18 Soundy & Sons	New York, 10 brls.	
41 Hicks, Nash & Co.	France, 40 Beck & Pollitzer	Belgium, 33 brls. J. L. Lyon & Co.	Molasses—	
40 Little & Johnston	Germany, 2 C. F. Gerhardt	Wood Pulp—	Hamburg, 250 cks.	
Natal, 22 A. & W. Nesbitt	Phosphate Rock—	Sweden, 800 pks. Alsing & Co.	N. Orleans, 2,000 brls.	
30 J. T. Rennie, Son, & Co.	B.W.I., 399 t. G. M. Bauer	Norway, 3,175 London Paper Mills Co.	Paint—	
N. Zealand, 25 Van der Meden & Co.	France, 140 A. Hunter & Co.	U States, 241 E. J. & W. Goldsmith	New York, 1 brl. 1 cs. Pitt & Scott	
Turmeric	Pitch—	Sweden, 240 Henderson, Craig, & Co.	Curacao, 1 kg. W. I. & P. S. S. Co.	
E. Indies, 32 bgs. Hoare, Wilson, & Co.	Germany, 63 brls. J. E. Powell	" 682 W. G. Taylor & Co.	Paraffin Scale—	
" 23 L. & I. D. Jt. Co.	Belgium, 35 H. Hunt	Canada, 1,994 E. J. & W. Goldsmith	New York, 232 brls. Thompson & Bedford	
67 Williams, Torrey, & Co.	Germany, 12 Poth, Hille, & Co.	Canada, 3,294 E. J. & W. Goldsmith	Paraffin Wax—	
Valonia	Plumbago—	Sweden, 340 bls. L. Owen	New York, 817 brls. Thompson & Bedford	
A. Turkey, 103 t. J. J. Greenstreet	Germany, 65 cs. Craven & Co.	Germany, 50 W. D. Cork	Phosphate—	
300 A. & W. Nesbitt	Ceylon, 32 brls. R. G. Hall & Co.	U States, 25 W. Johnston & Co.	Ghent, 1,007 bgs.	
170 Bontcher, Mortimore, & Co.	France, 3 cs. J. Harrison	Belgium, 1,686 E. J. & W. Goldsmith	Potash—	
" 15 M. D. Co.	Germany, 53 cks. L. & I. D. Jt. Co.	Holland, 27 cks. J. Matton	Antwerp, 1 ck. 3 dms. Sachse & Kleram	
104 Anning & Cobb	Ceylon, 218 J. Thredder, Son, & Co.	U States, 220 brls. M. Ashby Ltd	Stettin, 21	
Farina—	Germany, 188 cs. E. & T. Pink	Holland, 100	Montreal, 37 brls.	
Holland, 50 bgs. J. Keill & Co.	Potassium Oxymuriate—	LIVERPOOL.	Pyrites—	
100 J. Barber & Co.	Sweden, 200 kgs. G. Boor & Co.	<i>Week ending July 29th.</i>	Huelva, 1,359 t. Matheson & Co.	
100 R. Bennett & Co.	Potassium Sulphate—	Acetate of Lime—	Rosin—	
100 H. Lorenz	Belgium, 300 bgs. R. Waters	New York, 817 bgs.	N. Orleans, 250 brls.	
63 C. Tennant, Sons, & Co.	Pyrites—	Alkali—	New York, 279	
Gamboge—	Spain, 1,270 t. Naylor, Benzon, & Co.	Antwerp, 6 dms. J. T. Fletcher & Co.	Salicylic Acid—	
China, 11 cs. Chapman, Anthony, & Co.	Italy, 100 flsks. H. Bath & Sons	Alumina Sulphate—	Hamburg, 1 cs.	
Glucose—	Quicksilver—	Rotterdam, 26 cks.	Saltpetre—	
U. States, 1,000 pkts. 1,000 c. Pearce, Pelly, & Co.	Rosin—	Aluminous Cake—	Hamburg, 30 bgs. 11 cks. 145 kgs. Ralli Brs.	
" 200 1,740 Williams, Torrey, & Co.	U. States, 360 brls. Fairclough, Dodd, & Jones	Rotterdam, 95 cks.	Soap—	
" 300 1,782 E. & T. Pink	Saltpetre—	Barytes—	Boston, 8 cs.	
" 50 291 Union L. Co.	E. Indies, 907 bgs. Perkins & Homer	Antwerp, 33 cks. 50 bgs.	Philadelphia, qty.	
" 250 250 C. S. Lovell	Germany, 12 cks. L. & I. D. Jt. Co.	Bone Ash—	Hamburg, qty.	
Canada, 1,000 1,000 M. D. Co.	Soda—	B. Ayres, 440 bgs.	Soapstone—	
Germany, 74 120 J. Knill & Co.	Holland, 100 c. R. W. Greeff & Co.	Borate of Lime—	Bordeaux, 100 bgs. Geo. G. Blackwell, Sons & Co.	
France, 200 200 W. E. Cole	Belgium, 200 J. W. Barker	Antofagasta, 1,320 bgs.	Sodium Silicate—	
U. States, 200 200 A. E. Piggott & Sons	" 400 W. G. Jacobs	Borax—	Vera Cruz, 12 brls. J. Crosfield & Son	
" 150 920 Soundy & Sons	Sodium Acetate—	Valparaiso, 650 sks. Brownells & Co.	Starch—	
" 50 300 Page Son, & East	Belgium, 39 cks. H. Lorenz	Castor Oil—	Antwerp, 121 cs.	
France, 200 200 J. Parsons	Sodium Sulphate—	Calcutta, 399 cs. Ralli Brs.	Hamburg, 370	
" 100 100 L. Norman & Co.	Germany, 110 cks. Deering & Robottom	Chemicals (otherwise unclassified)	New York, 1,200 bgs.	
U. States, 150 900 Deering & Robottom	Starch—	Vera Cruz, 11 Elliott's Metal Co.	Boston, 200 sks.	
" 600 1,220 L. Norman & Co.	Belgium, 260 cs. F. Claydon & Co.	Antwerp, 2	Antwerp, 130 J. T. Fletcher & Co.	
" 1,000 1,000 Bellamy's Wf. Co.	France, 12 W. E. Cole	Colours—	Rotterdam, 60	
" 1,450 1,450 Beresford & Co.	" 400 Prprs. Dowgate Dk.	Antwerp, 1 ck.	Stearine—	
" 3,126 13,325 R. G. Hall & Co.	Germany, 200 Seaward Brs.	Hamburg, 3	Antwerp, 21 bgs. 2 cks. Dundee Arctic Fisheries Co. J. T. Fletcher & Co.	
Glue—	U. States, 1,400 bgs. Bertel Food Co. Henderson, Craig, & Co.	Cottonseed Oil—	Antwerp, 13	
Germany, £115 L. & I. D. Jt. Co.	Holland, 220 cs. Hernu, Peron, & Co.	Bordeaux, 19 cks.	Tallow—	
Belgium, 414 J. Barber & Co.	" 1,574 Little & Johnston	Dextrine—	Boston, 75 tcs. T. M. Mene & Co.	
Holland, 50 G. Rahn & Co.	" 165 Phillips & Graves	Stettin, 30 bgs. W. Slater & Co.	New York, 125 100 hds.	
Sydney, 30 Low & Co.	U. States, 250 bgs. R. Bennett & Co.	Dyestuffs—	Boston, 199	
France, 50 B. & F. Wf. Co.	Belgium, 208 cs. Leach & Co.	Aniline, 1 cs.	Punta Arenas, 5 cks.	
30 G. Rahn & Co.	" 70 Sawyer, Sons, & Co.	Rotterdam, 2 bskts.	Philadelphia, 100	
Lamp Black—	France, 380 T. H. Lee	Rotterdam, 2 bskts.	Baltimore, 100	
U. States, 100 brls. L. & I. D. Jt. Co.	U. States, 100 bgs. Ohlenschlager Brs.	Cochineal	Hamburg, 3 cks. 2 cs.	
Lead Acetate—	Holland, 620 cs. A. Starck	Gd. Canary, 20 bgs. Swanston & Co.	Tartaric Acid—	
Germany, 15 cks. F. Boehm	Germany, 30 J. Hall, junr., & Co.	Cutch	Hamburg, 10 cks.	
Litharge—	U. States, 200 bgs. R. G. Hall & Co.	Rangoon, 1,830 bxs.	Antwerp, 500 brls.	
Holland, 6 cks. J. Barber & Co.	Holland, 966 cs. Vokins & Co.	Kingston, 10 ps. E. Chaloner & Co.	Treacle—	
Germany, 18 H. Wallace & Co.	Belgium, 120 J. Harrison	Logwood	New York, 8 brls. Davies, Turner & Co.	
Holland, 16 J. Owen	U. States, 1,105 W. G. Taylor & Co.	Puerto Plata, 20 t.	Montreal, 1 kg. 2 bxs.	
Magnesite—	Stearine—			
Enbea, £20 t. Ekman Pulp & Paper Co.	France, 80 bgs. H. Hill & Sons			
	Melbourne, 15 cs. J. Ilbery			
	Sulphur—			
	Italy, 200 t. B. Jacob & Sons			
	" 200 W. C. Bacon & Co.			
	" 100 A. F. White & Co.			
	" 300 Brandram Brs. & Co.			
	Talc—			
	E. Indies, £20 Carter, Paterson, & Co.			

Verdigris — Bordeaux, 4 cks.	
Waste Salt — Hamburg, 100 l.	
White Lead — Rotterdam, 12 cks.	
Wood Pulp — Halifax, 1 car Maritime	
Boston, 55 crts. Sulphur Fibre Co.	
Gothenburg, 10 pks. Lever Bros., Ld.	
" 12 bls. Schenkenwald & Co.	
" 100 F. Jucker & Co.	
Nelgenas, 2,248 A. Doherty & Co.	
Zinc Oxide — Rotterdam, 20 cks. T. Mathews & Co.	
Zinc Skimmings — Philadelphia, 3 brls.	
Zinc White — Hamburg, 40 cks. M. Ashby & Co.	
Stettin, 80	
Rotterdam, 37	

MANCHESTER

Week ending July 31st.

Acetanilide — Rotterdam, 9 cs.	
Acetic Acid — Rotterdam, 8 blns.	
Ammonia — Rotterdam, 1 ck. 15 cs.	
Aniline Salts — Rotterdam, 11 cks.	
Annatto — Bordeaux, 13 cks. J. & P. Hutchison	
Barium — Rotterdam, 4 cks.	
Barytes — Rotterdam, 11 cks.	
Bone Ash — Rio Grande Do Sul, 323 t.	
Carbolic Acid — Treport, 24 cks.	
Chemicals (otherwise undes.) — Rotterdam, 28 cks.	
Colours — Rotterdam, 53 cks. 32 cs.	
Antwerp, 6	
Farina — Stettin, 1,002 bgs.	
Hamburg, 40	
Glue — Stettin, 60 bgs. 16 pks.	
Treport, 235	
Rotterdam, 2 cks. 6 bls.	
Limestone — Antwerp, 4 crts.	
Litharge — Rotterdam, 22 cks.	
Logwood — Belize, 352 t.	
Mineral White — Bordeaux, 250 bgs. J. & P. Hutchison	
Potash — Treport, 36 pks.	
Potassium Chloride — Hamburg, 20 cks.	
Potassium Prussiate — Rotterdam, 3 cks.	
Rosin — Savannah, 3,180 brls.	
Rosin Oil — Savannah, 295 brls.	
Soda — Rotterdam, 6 cks.	
Starch — Antwerp, 120 cs.	
Hamburg, 152	
Rotterdam, 10 cks. 246	
Tar Waste — Rotterdam, 14 cks.	
Tartar — Bordeaux, 24 cks. J. & P. Hutchison	

Tartaric Acid — Bordeaux, 8 cks. J. & P. Hutchison	
Rotterdam, 7 20 kgs.	
Ultramarine — Rotterdam, 2 cs.	
Waste Salt — Hamburg, qty.	
White Lead — Antwerp, 19 cks.	
Whiting — Gothenburg, 30 bgs.	
Wood Pulp — Gothenburg, 2,181 bls.	
Kallero, 3,128	
Hamburg, 1,279	
Zinc Oxide — Rotterdam, 90 brls.	
Zinc White — Rotterdam, 39 cks.	

HULL.

Week ending July 31st.

Albumen — Riga, 10 cs. Wilson, Sons, & Co., Ld.	
Alizarine — Rotterdam, 37 cks. W. & C. L. Ringrose	
18 pks.	
Barytes — Amsterdam, 24 cks. W. & C. L. Ringrose	
Antwerp, 121 50 bgs. Leatham, Ld.	
Chemicals (otherwise undescribed) — Gothenburg, 8 cks. Wilson, Sons, & Co., Ld.	
Stettin, 5	
Hamburg, 6	
Antwerp, 150 bgs. 67 pks. 1 ck. Bailey & Leatham, Ld.	
Cod Oil — Bergen, 20 brls. Wilson, Sons, & Co., Ld.	
Colours — Riga, 1,110 pks. Wilson, Sons, & Co., Ld.	
Rotterdam, 106 W. & C. L. Ringrose	
Bremen, 7 cks. Wilson, Sons, & Co., Ld.	
Ghent, 52 brls. Hutchinson & Son	
Rotterdam, 3 1 ck. 2 bxs. Wilson, Sons, & Co., Ld.	
Stettin, 20 Sissons Brs. & Co.	
Bremen, 23 cs. Wilson, Sons, & Co., Ld.	
Antwerp, 15 cks. Wilson, Sons, & Co., Ld.	
Dextrine — Stettin, 5 bgs. Wilson, Sons, & Co., Ld.	
Farina — Harlingen, 50 bgs. W. & C. L. Ringrose	
" 2 bls. Hutchinson & Son	
Glucose — Boston, 300 brls.	
Rotterdam, 50 bgs. Hutchinson & Son	
New York, 50 brls. Wilson, Sons, & Co., Ld.	
Stettin, 200 bgs.	
Glue — Christiansund, 3 brls. Wilson, Sons, & Co., Ld.	
Hamburg, 20 bgs. Rawson & Robinson	
Rouen, 5 cks. Wilson, Sons, & Co., Ld.	
Dunkirk, 8 cks.	
Lead Acetate — Hamburg, 3 cks. Bailey & Leatham, Ld.	
Linseed Oil — Amsterdam, 300 brls. Hutchinson & Son	
Minium — Rotterdam, 3 cks. Hutchinson & Son	
Naphthol — Rotterdam, 2 cks. W. & C. L. Ringrose	
Phosphate — Ghent, 80 t.	

Potash — Montreal, 10 brls.	
Dunkirk, 83 cks. Wilson, Sons, & Co., Ld.	
Potassium Silicate — Rotterdam, 50 cks. Hutchinson & Son	
Pyrites — Drontheim, 10 t. Wilson, Sons, & Co., Ld.	
Soda — Antwerp, 120 bgs. Bailey & Leatham, Ld.	
Sodium — Antwerp, 5 bds.	
Starch — Bremen, 3,225 cs. Veltmann & Co.	
Antwerp, 120	
Ghent, 202 Wilson, Sons, & Co., Ld.	
Antwerp, 20 bgs. "	
Stearine — Antwerp, 76 pks. Wilson, Sons, & Co., Ld.	
Tallow — Boston, 175 tcs. Wilson, Sons, & Co., Ld.	
Dunkirk, 97 cks. "	
Tar — Stockholm, 10 brls. Wilson, Sons, & Co., Ld.	
Tartaric Acid — Rotterdam, 4 cks. Hutchinson & Son	
Treacle — Boston, 175 brls. Wilson, Sons, & Co., Ld.	
New York, 543 "	
Ultramarine — Rotterdam, 5 cks. Hutchinson & Son	
Bremen, 8	
White Lead — Rotterdam, 37 cks. Hutchinson & Son	
Antwerp, 6 Bailey & Leatham, Ld.	
Amsterdam, 59 Hutchinson & Son	
Rotterdam, 19 W. & C. L. Ringrose	

Wood Pulp — Stettin, 360 pks. Wilson, Sons, & Co., Ld.	
Zinc Ashes — Stettin, 15 cks. Wilson, Sons, & Co., Ld.	
Zinc Oxide — Antwerp, 75 cks. Bailey & Leatham, Ld.	
Zinc White — Rotterdam, 35 cks. Hutchinson & Son	

GLASGOW.

Week ending August 5th.

Acetic Acid — Rotterdam, 7 cks. J. Rankine & Son	
Ammonia — Rotterdam, 26 cyldrs. J. Rankine & Son	
Arachide Oil — Rotterdam, 1 ck. J. Rankine & Son	
Barium Sulphate — Antwerp, 87 cks.	
Barytes — Rotterdam, 13 cks. J. Rankine & Son	
120 pks.	
Chrome Alum — Rotterdam, 6 brls. J. Rankine & Son	
Chromium Chloride — Rotterdam, 1 ck. J. Rankine & Son	
Colours — Antwerp, 1 ck. J. Rankine & Son	
Rotterdam, 36 pks.	
Cottonseed Oil — New York, 75 brls.	
Dyestuffs — Alizarine	
Rotterdam, 118 cks. J. Rankine & Son	
Aniline — Rotterdam, 69 cks. J. Rankine & Son	
11 bxs.	

Cutch — Rangoon, 185 bxs.	
Gambier — Penang, 472 bls.	
Indigo — Rotterdam, 6 brls. J. Rankine & Son	
1 bx.	
Shumac — Palermo, 100 bgs. 60 bls.	
French Chalk — Leghorn, 5 cs.	
Glucose — New York, 689 brls.	
Paraffin Scale — New York, 400 brls.	
Phosphate of Lime and Rock — Ghent, 1,010 bgs.	
Phosphate Rock — Bona, 1,050 t.	
Phosphorus — Baltimore, 10 bxs.	
Potash — Rotterdam, 72 cks. J. Rankine & Son	

Pumice Stone — Messina, 50 bgs.	
Rosin — New York, 1,050 brls.	
Soap — New York, 239 brls. Newport News, 100 Jas. Bunten & Co.	
Sodium Nitrate — Rotterdam, 13 cks. J. Rankine & Son	
Starch — New York, 2,625 sks.	
Stearine — Amsterdam, 63 bgs.	
Sulphur — Catania, 604 bgs.	
Tallow — New York, 50 brls. 5 tcs.	
Tartar — Bordeaux, 6 cks.	
Treacle — Boston, 250 brls.	
Waste Salt — Hamburg, 1,075 bgs. 6 cks.	
White Lead — Rotterdam, 10 cks. J. Rankine & Son	
5 pks.	
Wood Pulp — Skutskar, 4,908 bls. Henderson, Craig, & Co.	
Montreal, 500	
Hamburg, 200	
Porsgrund, 1,440	
Christiania, 1,654 40 cs.	
Zinc White — Rotterdam, 26 cks. J. Rankine & Son	

TYNE.

Week ending July 31st.*

Alum Earth — Hamburg, 30 cks. Tyne S. S. Co.	
Barytes — Rotterdam, 134 bgs. Tyne S. S. Co.	
Castor Oil — Antwerp, 28 brls. Tyne S. S. Co.	
Colours — Hamburg, 5 cs. Tyne S. S. Co.	
Glucose — Rotterdam, 11 cks. Tyne S. S. Co.	
New York, 350 brls. Furness, Withy, & Co.	
Lead Acetate — Hamburg, 5 cks. Tyne S. S. Co.	
Phosphate — Ghent, 235 t.	
Rosin — New York, 400 brls. Furness, Withy, & Co.	
Starch — Rotterdam, 40 cs. Tyne S. S. Co.	
Varnish — New York, 80 brls. Furness, Withy, & Co.	
Antwerp, 2 Tyne S. S. Co.	
Wood Pulp — Rotterdam, 100 bls. Tyne S. S. Co.	
Christiania, 1,350 P. H. Mathieson & Co.	

GOOLE.		Farina—		Stearine—		Caoutchouc—	
<i>Week ending July 28th.</i>		Hamburg, 550 bgs.		Antwerp, 13 bgs.		Rotterdam, 9 cks.	
Alizarine—		Madder—		Waste Salt—		Antwerp, 7	
Rotterdam, 35 cks. 2 cs.		Rotterdam, 4 cks.		Hamburg, 200 l.		Hamburg, 1	
Alkali—		Paint—		Wood Pulp—		Chemicals (otherwise undescribed)	
Calais, 7 cks.		Boulogne, 2 cs.		Rotterdam, 127 bls.		Hamburg, 2 cks. 2 cs.	
Antimony Sulphide—		Potash—		Antwerp, 988		Colours—	
Boulogne, 10 cks.		Calais, 16 dms.		GRIMSBY.		Hamburg, 19 cks. 36 cs.	
Colours—		Dunkirk, 2 cks. 40		<i>Week ending July 31st.</i>		Rotterdam, 4	
Hamburg, 21 cks. 1 cs.		Saltetre—		Albumen—		Dieppe, 3	
Dyestuffs (otherwise undescribed)		Rotterdam, 100 bgs.		Hamburg, 5 cks.		Antwerp, 13 10 pks.	
Boulogne, 288 cks. 97 cs.		Hamburg, 2 cks.		Indigo—		Rotterdam, 11 cs.	
Amsterdam, 20 4 10 pks.		Soap—		Paint—		Hamburg, 8 dms.	
Extracts—		Hamburg, 10 cks.					
Hamburg, 100 bgs.							

EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending August 4th.

Alkali—			
Auckland,	10 t. 8 c.	£55	
Antwerp,	2 11	73	
Alum—			
Demerara,	1 brl.	£15	
Alum Waste—			
Calcutta,	40 t.	£98	
Ammonia (Liquid)—			
Hamburg,	30 cs.	£34	
Cologne,	25 dms.	107	
Ammonium Carbonate—			
B. Ayres,	1 t.	£28	
Bordeaux,	10 cks.	26	
Cape Town,	5 c.	10	
Ammonium Chloride—			
Christiania,	2 t. 13 c.	£56	
Trebironde,	15	23	
Lisbon,	11	17	
Cologne,	3 2	58	
Constantinople,	3 10	78	
Ammonium Sulphate—			
Reuen,	10 t. 13 c.	£500	
Mauritius,	307	2,546	
Amsterdam,	30 12	256	
Bremen,	100	777	
Sulphate of Lime—			
Cape Town,	1 t.	£8	
Blaching Powder—			
Pt. Elizabeth,	1 t.	£13	
Hamburg,	1 13 c.	17	
Boracic Acid—			
Wellington,	10 kgs.	£14	
Borax—			
Rotterdam,	10 cks.	£28	
Carbolic Acid—			
Boulogne,	40 cks.	£400	
Amsterdam,	73	415	
Brussels,	13	28	
Sydney,	20	11	
Carbonic Acid Gas—			
New York,	9 cs.	£30	
Napier,	5	30	
Jersey,	88 tubes	34	
Caustic Soda—			
Pt. Elizabeth,	3 t. 12 c.	£82	
Sydney,	4 7	42	
Wellington,	13	28	
Dunedin,	10	89	
Malta,	18	9	
Brisbane,	6	6	
E. London,	1	21	
Chemicals (otherwise undescribed)			
Hong Kong,	6 cs.	£13	
Alexandria,	4 pks.	15	
Antwerp,	37 cks.	410	
Hamburg,	4 dms.	22	
Dusseldorf,	3	10	
Kurrachee,	100 kldrks.	130	
Halifax,	4 bhd.	18	
Pt. Elizabeth,	43 pks. 2 cs.	42	
Amsterdam,	4	48	
Cologne,	34 6	137	
Wellington,	46 5	10	
Sydney,	46 43		
Adelaide,	2 13		
Melbourne,	99 740		
Brisbane,	71 7 444		
Madras,	24 37 71		
Rotterdam,	25 cks 30 kgs.	85	
Brussels,	7 pks.	20 3 184	
Bombay,	35	158	
Durban,	10 pks.	39	
New York,	21	50	
Calcutta,	30 kgs.	2 103	

Montreal,	4 40 dms.	81	
Las Palmas,	13 19		
Citric Acid—			
Rotterdam,	2 c.	£13	
Odessa,	8 kgs. 2	62	
Karachi,	1 cs.	8	
Melbourne,	10	60	
Sydney,	11	60	
Pt. Elizabeth,	1	7	
Calcutta,	2	12	
Christiania,	5	32	
Coal Products—			
Anthracene			
Cologne,	86 cks.	£350	
Benzol			
Cologne,	22 dms.	£423	
Boulogne,	61	227	
Creosote			
Boston,	20 brls.	£20	
Hong Kong,	10 cks. 10 dms.	50	
Karachi,	10	40	
Naphthaline			
Rotterdam,	100 bgs.	£52	
Pitch			
New York,	2,810 bgs. 433 cks.	£580	
Havre,	550 t.	690	
Baltimore,	100 500 bgs. 05		
Alexandria,	100 150 brls. 77		
Cape Town,	20 dms.	5	
Antwerp,	250	275	
Prussian Blue			
Rotterdam,	3 cks.	£12	
Dusseldorf,	11	67	
Pyridine			
Cologne,	5 brls.	£50	
Tar			
Trinidad,	5 runlets	£3	
Gothenburg,	100 cks.	70	
Cologne,	175 brls.	75	
Sydney,	2	18	
Durban,	790 dms.	62	
Brisbane,	50	10	
Toluol			
Rotterdam,	55 cks.	£347	
Coal Products (otherwise undescribed)—			
Durban,	400 dms.	£15	
Copper Sulphate—			
Hamburg,	11 t. 10 c.	£179	
Stettin,	15	234	
Danzig,	16 15	262	
Antwerp,	14 19	234	
Pt. Elizabeth,	4 cks. 17		
Constantinople,	2 5	40	
Cream of Tartar—			
Wellington,	3 c.	£12	
Melbourne,	4 t. 5	332	
Disinfectants—			
Adelaide,	5 brls.	£11	
Brisbane,	20 pks.	31	
Fremantle,	106	63	
Melbourne,	166	222	
Cape Town,	25 cs.	35	
Jamaica,	11	10	
Karachi,	504 dms.	252	
Bombay,	102 13	£64	
Shanghai,	1,000 232	440	
Calcutta,	15	12	
Hamburg,			
Guanio—			
Cape Town,	7 c.	£13	
Manure—			
Trinidad,	50 t.	£400	
Madeira,	20	140	
Lyttelton,	30 12 c.	100	
Gothenburg,	19 14	40	
Memel,	700	1,565	
Guernsey,	6	34	
Nitric Acid—			
Jersey,	21 carboys	£42	

Phosphate—			
Mauritius,	65 t.	£174	
Potash—			
Brussels,	2 cs.	£25	
Potash Salts—			
Auckland,	9 t. 5 c.	£571	
Potassium Bicarbonate—			
Philadelphia,	1 t. 12 c.	£42	
Potassium Chlorate—			
Batoum,	6 kgs.	£11	
Pt. Elizabeth,	20	34	
Potassium Cyanide—			
Madras,	12 t. 12 c.	£870	
E. London,	6	518	
New York,	100 cs.	443	
Potassium Permanganate—			
E. London,	3 t.	£204	
Saltetre—			
Melbourne,	2 t.	£41	
Durban,	9 c.	10	
New York,	253 10	3,550	
Wanganui,	10	11	
Oporto,	5 18	114	
Venice,	13	12	
Sheep Dip—			
Fremantle,	50 cs.	£88	
Napier,	200	350	
Gisborne,	140	245	
B. Ayres,	1,000	2,350	
Straits of Magellan,	57 cks. 87 pks.	659	
Pt. Elizabeth,	8 t. 1 c.	166	
Adelaide,	8 2	85	
Soda—			
Gothenburg,	5 t. 17 c.	£27	
Rotterdam,	5 8	32	
Dunedin,	1 5	10	
Sodium Bicarbonate—			
Pt. Elizabeth,	3 t.	£15	
St. Helena,	1 10 c.	8	
Sodium Sulphate—			
Ghent,	50 t.	£75	
Sulphur—			
Straits of Magellan,	20 cks. 192 hds.	£363	
Cape Town,	20 kgs.	7	
Sulphuric Acid—			
Colombo,	25 cs.	£25	
Aden,	15	13	
Madeira,	10 19		
Pt. Elizabeth,	6 t. 45		
Superphosphates—			
Trinidad,	50 t.	£110	
Mauritius,	94 2 c.	347	
Tartaric Acid—			
Valencia,	6 c.	£31	
Malta,	15	13	
Adelaide,	10 59		
Cape Town,	2 11		
E. London,	2 14		
Melbourne,	3	293	

LIVERPOOL.

Week ending August 4th.

Alum—			
Constantinople,	6 t.	3 q	£27
Vigo,	1 2 c.	0	
Alumina Sulphate—			
Lisbon,	10 t.	£34	
Ammonia (Liquid)—			
Vera Cruz,	4 c. 1 q.	£5	

Ammonium Carbonate—			
Genoa,	1 t. 16 c.	1 q.	£32
Bordeaux,	18		27
Gothenburg,	15 1		23
Marseilles,	10 15		15
Danzig,	18 1		25
Hamburg,	10 2		15
Vigo,	12		17
Barcelona,	1		28
Ammonium Chloride—			
Stettin,	1 t. 1 c.		£18
Bourgas,	1 4		6
Trieste,	1		30
Montreal,	1 7 1 q.		28
Genoa,	1 3		32
Piræus,	4		6
Alexandria,	5		153
Salonica,	18		27
Bombay,	1 1		31
Ammonium Sulphate—			
Gd. Canary,	94 t. 14 c.		£196
Barcelona,	5 15		40
Las Palmas,	8 10 1 q.		52
Honolulu,	50 10		375
Nantes,	10 1		79
Bleaching Powder—			
Adelaide,	7 brls.		
Ancona,	10 cks.		
Baltimore,	30 bxs. 99	70	
Bilbao,	15		
Bombay,		10 cs.	
Boston,	446		
Calcutta,		130	
Demerara,		6	
Dunkirk,	18		
Genoa,	128		
Ghent,	145		
Havre,	15		
La Pallice,	28		
Montreal,	26 32		
Naples,	59		
New York,	125 2,8		
Oporto,	15		
Philadelphia,	104		
San Sebastian,	59		
Boracic Acid—			
Antwerp,	2 t. 2 c. 1 q.	£15	
Rotterdam,	2 13		53
Borax—			
Gijon,	3 t. 5 c. 3 q.	£55	
Galatz,	10 9		
E. London,	1 70		
Santander,	4 60		
Hamburg,	15 12		
Rio,	1 16		
Copenhagen,	5 5 1 84		
Rotterdam,	5 4 3 84		
Constantinople,	1 9 33		
Antwerp,	28 16 2 509		
Barcelona,	9 160		
Genoa,	11 10 224		
Calcium Chloride—			
Gibraltar,	3 t.		£6
Carbolic Acid—			
Antwerp,	4 c. 1 q.	£7	
Hamburg,	7		25
Caustic Liquor—			
Rotterdam,	1 t. 5 c. 1 q.	£22	
Caustic Potash—			
Baltimore,	2 t. 10 c.	£66	
Cape Town,	1 1		28
Caustic Soda—			
Adelaide,	150 dms.		
Amsterdam,	29		
Ancona,	55		
Antwerp,	17		
Bahia,	99		

Baltimore, 140 cks.	Wellington, 10	8	Potassium Prussiate—	Soda Alkali—
Barcelona, 400	Stettin, 11	17	Genoa, 10 c.	Barcelona, 35 brls.
Bari, 80	Odessa, 5	18	3 q.	Bilbao, 37
Batavia, 40	Danzig, 13	14	£13	New York, 40
Bilbao, 114	Catania, 6	2		Soda Ash—
B. Ayres, 100	Konigsberg, 12	11		Amsterdam, 24 bgs.
Cape Town, 3	Bordeaux, 12	19		Ancona, 100
Colombo, 10				Antwerp, 1,968
Corral, 25				Barcelona, 44
Corinto, 7				Bari, 20 dms.
Corunna, 16				Bombay, 21
Dunedin, 5				Boston, 1,080
Dunkirk, 35				B. Ayres, 57 tcs.
E. London, 20 cs.				Calcutta, 400 brls.
Fairwater, 203				Cape Town, 17
Fiume, 25				Copenhagen, 550
Genoa, 116				Dunedin, 29
Halifax, 18				Fiume, 20
Hio, 727				Genoa, 100
Ibrail, 68				Ghent, 157
Lisbon, 25 kgs.				Gijon, 2
Malaga, 95				Gothenburg, 50
Manila, 270				Hamburg, 500
Melbourne, 130				Leghorn, 130
Messina, 140				Naples, 150
M. Video, 20				New York, 33
Montreal, 75				Oporto, 12
Nagasaki, 150				Philadelphia, 1,160 pks.
Naples, 70				Puerto Cabello, 120
N. Orleans, 135				Rio de Janeiro, 2,550 bgs.
New York, 310				San Sebastian, 50
Norroping, 12				Savannah, 100
Oporto, 111				Smyrna, 200
Palermo, 20				Stettin, 80
Philadelphia, 50				Sydney, 50
Rio de Janeiro, 20				Valparaiso, 20
Rosario, 60				Varna, 25
Rotterdam, 56				Venice, 100
San Francisco, 145				Soda Crystals—
San Sebastian, 195				Alexandria, 150 brls.
Santos, 636				Bombay, 100 kgs.
Singapore, 10 bxs.				Calcutta, 33
Stettin, 18				Galatz, 30
Talcahuano, 125				Gibraltar, 25
Trieste, 15				Gijon, 18
Valparaiso, 50				Halifax, 20
Vera Cruz, 100				New York, 560
Yokohama, 450				Philadelphia, 280
				St. John's, 45
				Valparaiso, 400
Chemicals (otherwise undes.)—				Sodium Bicarbonate—
Calcutta, £134				Alexandria, 75 kgs.
Bordeaux, 7 pks.				Algoa Bay, 20 bgs.
B. Ayres, 79 c.				Antwerp, 65 kgs.
Piræus, 5				Barbadoes, 100
Philadelphia, 13 t.				Bombay, 285
Stettin, 8				Bilbao, 50
Sydney, 10				Bordeaux, 75
Stettin, 134 bgs.				Boston, 25 bgs.
China Clay—				Bremen, 15 kgs.
Barcelona, 42 cks.				Bombay, 10 cks.
Bombay, 452				Calcutta, 400
Melbourne, 52				Catania, 150
Philadelphia, 500				Constantinople, 130
Citric Acid—				Copenhagen, 60
Vera Cruz, 1 c.				Danzig, 15 pks.
Piræus, 1				Dunedin, 40
Corunna, 6				Freemantle, 10
Coal Products—				Genoa, 40
Aniline Dyes				Ghent, 10
Calcutta, 3 pks.				Gibraltar, 20
Aniline Salts				Halifax, 20
Boston, 12 t.				Hamburg, 200
Constantinople, 1 ck.				Hong Kong, 28
Naphtha				Karachi, 125
B. Ayres, 19 dms.				Konigsberg, 200
Pitch				Libau, 76 bgs.
Bourgas, 20 brls.				Malta, 20
Galatz, 60				Marseilles, 65
Ibrail, 30				M. Video, 143
Tar				Nantes, 60
Demerara, 30 brls.				Newcastle, 25
Galatz, 50				Newfairwater, 25
Ibrail, 15				New Glasgow, 25
Kustendjie, 20				N. Orleans, 83 brls.
Lagos, 10				Odessa, 40
Tar Oil				Rio de Janeiro, 20
St. Nazaire, 30 cks.				Rotterdam, 20
Coal Products (otherwise undes.)—				St. John's, 20
Shanghai, 10 cs.				St. Nazaire, 20
Copper Sulphate—				Singapore, 20
Salonica, 1 t.				Trinidad, 100
Galatz, 1				Vera Cruz, 100
Colombo, 2				Wellington, 377
Constantinople, 1				
Stamboul, 1				Sodium Chlorate—
Alexandria, 1				Naples, 40 dms.
Sydney, 6				Newfairwater, 24 cks.
Varna, 10				Sodium Hypsulphite—
Marseilles, 5				Tampico, 50 cks.
M. Video, 6				Sodium Silicate—
B. Ayres, 1				Bilbao, 35 brls.
New York, 30				Nantes, 18 dms.
Genoa, 24				
Wiberg, 1				

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Contents.

	PAGE		PAGE
The Statement of Analyses.....	113	The Salt Trade	119
Imports and Exports for July	114	Trade Notes	120
Notes on American Chemical		Tar and Ammonia Products	120
Industry	114	Miscellaneous Chemical Market	120
Gold Output in the Rand	114	The Metal Markets	121
The Patent List	115	Report on Manure Material	121
Abstracts of Latest Complete Spec-		Liverpool Oil and Colour Market	121
ifications	115	Hull Paint, Oil, and Colour Report	121
The Commercial Preparation of		West of Scotland Chemicals	121
Nitro-naphthalenes	116	Tyne Chemical Report	121
Official Memoranda	117	New Companies	122
Ribble Joint Committee	118	Imports	122
Chili and the Nitrate Industry	118	Exports	125
The Manchester Sewage Scheme	119	Prices Current	128

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Advertisements intended for insertion in the current week's issue should reach the office by **Thursday morning** at the latest.

THE STATEMENT OF ANALYSES.

WITH the extension of Food, Fertilizer, and Public Health Acts it has become necessary for chemical analysis to play a more frequent part in the conduct of public affairs.

It now often happens that a jury has to arrive at conclusions, in the formation of which a reasonable appreciation of analytical data is essential.

Partly for reasons such as the foregoing, an attack has been made recently by Mr. H. Leffmann upon some of the existing methods of expressing the results obtained in the analysis of milk, butter, water, and such-like everyday commodities.

Many of his strictures are certainly to the point. He contends that an indication of the analytical methods used should be made on the report, especially so as to give a clue to those items which have been estimated by difference or by a calculation pure and simple, such as the "added water" in milk.

Apart from points of this nature, which are largely matters of opinion and more or less controversial, the chief indictment is the want of uniformity in the statement of results. Water analysis naturally has to bear the brunt of this attack.

While complaining of the difficulties of instituting a comparison when results are expressed either in grains per United States or Imperial gallon, and also parts per million or hundred thousand, Mr. Leffmann's most emphatic denunciation is directed against the conjoint use of these methods of expression—namely, grains per gallon for everything except the so-called "ammonias."

He takes strong exception to the terms free and albuminoid ammonia as being inaccurate, and is also even more opposed to the nitrogen existing as nitrites and nitrates being expressed as nitrous or nitric acid.

This criticism, however, is not merely destructive, as Mr. Leffmann defines the axioms on which he would conduct reform, and they seem to be these—express the data in terms of the elements and ascertained radicals present. It is highly inadvisable to state any element in terms of a combination that cannot possibly exist in the water.

A protest is also made against the loose use of the terms sulphuric, phosphoric, carbonic, or nitric acid. The fault more often lies, we think, with the laxity of the interpreters. But though there is some ground for this complaint, we think it is going too far to ask "Does the chemist mean by sulphuric acid SO_3 , SO_4 , or H_2SO_4 ? Similarly does carbonic acid mean CO_2 , CO , or H_2CO_3 ?"

We do not know what sulphuric acid means to Mr. Leffmann, but as he asks what does the chemist mean by it we can assure him that the chemist means what he says.

Sulphuric acid is sulphuric acid and cannot be taken as a synonym for sulphuric anhydride (sulphur trioxide if preferred), or an impossible radical. The same applies to

carbonic acid. If CO_2 were meant, a chemist might have described it as carbonic acid gas, but would more likely have denominated it carbonic anhydride or carbon dioxide.

Apart from this squib there is reason in much that Mr. Leffmann says.

We have dwelt to some purpose in the past upon the urgency of this question of conformity in water analysis, and the growth of River Committees and Purification Boards is bringing this branch of analysis out of the sphere of the laboratory into that of commerce. It is being looked to as an indicator, and used as a rudder.

The importance of seeking conformity of expression, and also of interpretation, is therefore growing, and we commend the point to the attention of water analysts, because it is unfortunate for the science of analysis that the most inconsistent, often most inscrutable, and superficially blemished of all its branches, should be finding its way into such public prominence without any serious attempt at systematising or adjustment.

IMPORTS AND EXPORTS FOR JULY.

THE Board of Trade returns for the past month are satisfactory as a whole, and also as regards the chemical industries. Among the imports, though there is a decline in chemical products and manures, there has been an increase in tallow and oils, particularly petroleum, which shows an increase of 8,000,000 gallons. The exports of alkali, manures, and salt show an increase in value and quantity.

IMPORTS OF FOREIGN AND COLONIAL PRODUCE

ARTICLES.	Quantities.	
	1896.	1897.
Margarine	Cwt. 64,128	67,610
Copper Ore and Regul.	Tons. 23,401	19,878
Pyrites	" 47,828	51,829
Tin	Cwt. 49,004	26,406
Alkali	" 8,477	18,658
Brimstone	" 51,820	35,880
Dyes, Coal Tar	" 64,483	52,144
Saltpetre	Cwt. 40,872	25,950
Petroleum	Gall. 13,558,795	21,096,814
Turpentine	Cwt. 93,141	101,402
Guano	Tons. 324	421
Nitrate of Soda	" 9,051	3,249
Paraffin	" 52,081	47,105
Rosin	Cwt. 186,338	140,504
Tallow and Stearine	" 194,584	264,983
Oil Seed Cake	Tons. 39,531	29,495
Wood Pulp	" 35,379	28,510

EXPORTS OF BRITISH AND IRISH MANUFACTURES.

ARTICLES.	Quantities.	
	1896.	1897.
Alkali	Cwt. 351,753	371,991
Cement	Tons. 32,600	38,039
Coal and Coke	" 3,131,019	3,706,918
Copper, all kinds	Cwt. 64,552	76,561
Iron and Steel	Tons. 326,991	331,553
Chemical Manures	" 37,228	41,517
Oils, seed	" 4,285	3,688
Salt	" 60,154	61,100

PERSONAL.—Mr. Thomas H. Leithard has been appointed managing director of Locke, Blackett & Co., (Limited), Gallowgate Leadworks, Newcastle-on-Tyne, with Mr. M. Milburn as secretary.

SCOURING WOOL.—An interesting pamphlet dealing with this subject will be issued shortly from Hull. Our foreign consuls have from time to time made remarks in their reports showing it is due to the improvements in scouring that Germany has been able to compete successfully with British trade in woollens. The appearance of this booklet will therefore be opportune.

NOTES ON AMERICAN CHEMICAL INDUSTRY.

Carborundum.—President E. G. Acheson, of the Carborundum Company, of Buffalo, N.Y., has returned from Germany, where he went to establish a branch carborundum works for the home company. According to the *Engineering and Mining Journal*, the plant in Germany was started in order to preserve the patent rights of the company, and the works were set in motion only a few days before the rights would have expired unless the manufacture had been begun.

The first point in the litigation between the Cowles Electric Smelting and Aluminium Company and the Carborundum Company has been secured by the latter, the United States Circuit Court for Western Pennsylvania having just given its decision. The suit was brought by the Cowles Company to enjoin the Carborundum Company from using the Acheson electric furnace, on the ground that it infringed the Cowles patents. The suit was begun about three years ago, but a new element was recently introduced by the Cowles ownership of the Bradley patents. The Court now decides that the Acheson furnace is not an infringement.

Fertilizers.—The improvements at the Southern Phosphate Works, at Macon, Ga., are about completed, and the capacity has been doubled in preparation for next season's business, which commences in October. The output of the works will amount to about \$700,000 next year. At present they are running night and day, and giving employment to about 150 hands.

The Rancocas Chemical Works, of Rancocas Creek, Burlington County, N.J., have been organised to manufacture phosphatic fertilizers, Capital, \$50,000. Incorporators, Robert L. Thetler, of Oswego, N.Y.; George P. Deacon, Bowers, N.J., and Eli A. Wakefield, Philadelphia.

The Columbia (S.C.) Phosphate Company, of which Mr. W. A. Clark is the President, will increase the capacity of their acid chambers about 50%. Pyrites burners will replace the brimstone burners now in use. When all the contemplated changes have been made the mill will turn out 15,000 tons of phosphate annually instead of 10,000 tons as at present. All the new work will be completed by the end of August.

GOLD OUTPUT IN THE RAND.

THE output of gold from the Rand district during July, as cabled by the Witwatersrand Chamber of Mines, amounts to 194,254 oz. This total, however, is exclusive of the returns of several companies which, under the title of the "Association of Mines of the South African Republic," give their joint output as 48,225 ozs. The month's production is, therefore, 242,479 ozs., and shows a decrease of 9,050 ozs. as compared with the previous total, and an increase of 38,666 ozs. as compared with the corresponding month of 1896. The following table gives the monthly returns since the beginning of 1894:—

	1894.	1895.	1896.	1897.
	oz.	oz.	oz.	oz.
January	149,814	177,463	148,178	209,832
February ...	151,870	169,295	167,018	211,000
March	165,372	184,945	173,952	232,067
April	168,745	186,323	176,707	235,698
May	169,773	194,580	195,008	248,305
June	168,162	200,941	193,640	251,529
July	167,953	199,453	203,873	242,479
August	171,977	203,573	213,418	—
September ..	176,707	194,764	202,561	—
October	173,378	192,652	199,889	—
November ..	175,304	195,218	201,113	—
December ..	182,104	178,428	206,517	—
Total ..	2,024,159	2,277,635	2,281,874	1,630,910

PROGRESS IN TECHNICAL EDUCATION.—Pending the completion of a scheme for the creation of a polytechnic at Hackney, the Board has made arrangements to begin technical classes in the building trade in September at Cassland House, Cassland Road, South Hackney. It is hoped that these classes may form a nucleus out of which a larger institute may eventually grow. The Board is also arranging to open an art school in the building recently erected in connection with the South London Art Gallery. The art gallery will be under the direction of the Vestry of Gamberwell, while the Technical Education Board will be responsible for the teaching given in the school. The new day school for boys at the Borough Polytechnic will be opened in September. It will be conducted as an organised science school, and the special aim will be to equip the pupils for practical industrial life. Mr. E. T. Marsh, science master at Owen's School, has been appointed head master. The governors of Battersea Polytechnic have decided to devote special attention to the teaching of chemistry in its relation to the various chemical industries of the district; and the governors of the South West Polytechnic are about to open a day college for women in which classes will be held in art, science, literature, domestic economy, and physical training.

The Patent List.

This list is compiled from Official sources in the Manchester Chemical Laboratory, under the immediate supervision of Mr. E. Davis and Alfred R. Davis, who report professionally the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Producing Carburetted Water Gas. W. Young and A. Bell. 18,085. August 3.
 New Chemical Compound. W. Wallace. 18,102. August 3.
 Manufacturing Steel Direct in a Cupola. T. Doherty. 18,135. August 3.
 Septic Substances. W. L. Wise. 18,178. August 4.
 Apparatus for Converting Nitric Peroxide into Nitric Acid. O. Lüttmann. 18,189. August 4.
 Treating Wood. S. E. Haskin. 18,195. August 4.
 Separating and Recovering Zinc from Solutions. W. J. Wigg and E. G. Ballard. 18,217. August 5.
 Preparing Calcium Carbide. F. H. Smith. 18,218. August 5.
 Gas, Water, and Acid Valves. E. R. Farnsworth. 18,223. August 5.
 Manufacture of Cement. F. D. Cummer. 18,246. August 5.
 Treating Wool Grease. J. Hopkinson. 18,251. August 5.
 Separating Precious Metals from Solution. T. B. McGhie. 18,252. August 5.
 Producing Alkaline Prussiates and Cyanides, and Recovering the re-agents. E. L. Lalbin. 18,271. August 5.
 Treating Gutta-Percha. W. Ramsay. 18,331. August 6.
 Treating Precious Metals. F. B. Aspinall and E. C. Ekstromer. 18,339. August 6.
 Apparatus for Producing Calcium Carbide. G. Webb, jun., J. W. Kelly, and H. Rowntree. 18,345. August 6.
 Manufacture of Plaster or Cement. J. Parnall. 18,391. August 7.
 Separating Perchloride of Iron from Etching Solutions. O. Luppe. 18,417. August 7.
 Treating Sugar with Barium Compounds. L. Sternberg. 18,429. August 7.

ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

These abstracts are specially prepared for the Chemical Trade Journal, ALL RIGHTS OF PUBLICATION ARE RESERVED. This is the earliest of abstracts of Chemical and allied patents accessible to the public.

Improvements in and Relating to Tanks for the Precipitation of Sewage and Foul Liquids. The Magnetite Sewage and Water Purification Co., Ltd., and G. H. Skelsey, both of 33, Barton-arcade, Manchester. Eng. Pat. 18,235. September 25, 1896.

A series of baffle walls are built from the top and bottom of the tank, namely. The chambers so formed at the bottom are built with rising or conical sides, which approach one another towards the bottom and form a pocket in which the sludge collects. Vertical pipes to the bottom of these recesses, and are connected severally with a central pipe running the length of the tank. The sludge as it collects is removed by opening a valve on the vertical pipe when the pressure of the sewage in the tank forces the sludge up the vertical pipe into the horizontal connection, whence it is discharged. There are 3 figures.

Process for Revivifying Bone-black or Animal Charcoal. J. Wetter, 113, Strand, London (communicated by M. Weinrich, 1,746, Waverley-place St. Louis U.S.A.). Eng. Pat. 19,310. September 1, 1896.

Instead of the old destructive distillation process, the char is oxidized in air. The apparatus in this instance consists of a stationary cylinder sloping slightly towards the discharging end, and fitted with internal stirring mechanism. The whole is surrounded with a jacket, to which hot air or fuel gases are admitted, so as to raise the temperature to about 400° F. at the discharging end, and maintaining a temperature of 300° to 350° F. where the char enters. By regulating the supply of air to the interior of the heated cylinder, the organic impurities are burnt away without attacking the carbon. It is claimed that less washing is required, much time and fuel are saved, and there is not the same loss of calcium carbonate, an essential of good bone-black. There are two diagrams.

Improvements in the Treatment of Bleaching Powder to Preserve it from Loss of Active Chlorine. J. Y. Johnson 47, Lincoln's Inn Fields London (communicated by Chem. Fab. Electron Act. Ges., Frankfurt a/ Main). Eng. Pat. 19,222. August 31, 1896.

The familiar difficulties of storing bleach owing to the adverse influence of the moisture and carbon dioxide in the atmosphere are explained, and compression is the suggested remedy. In patent 5,673, of 1886, attention is made of compressing bleach into cakes, but it has been found that if compressed insufficiently or excessively the desired end is not attained. By compressing sufficiently to ensure a specific gravity of 1.0 to 1.1, but not over, a solid block is obtained which resists the action of the air. When exposed it becomes coated with a thin damp

film of calcium carbonate, which protects it. When broken up a sandy powder is formed, with little dust and no smell of chlorine. Experiment has shown that such blocks can be exposed to a temperature of 35° C. for five weeks without loss of active chlorine. Trial shipments in very thin ($\frac{1}{16}$ to $\frac{1}{32}$ inch) iron drums have been successfully made. The requisite compression is not effected without some difficulty, though there is no rise in temperature or exhibition of elastic action, yet no mention is made of how the compression is carried out.

An Improved Composition for Preventing Incrustation in Steam Boilers. L. Lewis, Pontywayn, near Newport. Eng. Pat. 14,226. June 11, 1897.

Cider apples, acorns or oak apples, and cider apple muss are mixed in the proportions of 10, 2 and 1 respectively and ground to a pulp. In addition 1 cwt. of oak bark and 1 cwt. peat ashes are leached with 20 gallons of water. The lye so formed is mixed in an equal quantity of the above pulp. The mixture should be stored in open casks covered with water to prevent fermentation. The mixture added to the feed water in a suitable tank, and the treated water injected or pumped into the boiler in the usual way.

Improvements in the Production of Copper Sulphate. T. Savage, Hooper-street, Spring Hill, Birmingham. Eng. Pat. 21,953. October 3, 1896.

Whereas copper sulphate is usually made commercially by dissolving the metal in vitriol, it is proposed to use nitrate of soda in conjunction with the acid. The customary dissolving and crystallizing plant is used. The process may be conveniently carried out as follows:—56 pounds of copper, 84 pounds of sodium nitrate, and 168 pounds of 1.2 sp gr. acid are placed in a steam-heated tank. When the solution is saturated it is syphoned off into the crystallizers. It is claimed that the solution of the copper is effected in one-sixth the time, and at less cost than by the old process.

New Process for the Production of Ammonium Bichromate. Dr. W. Majert, Grünau, near Berlin. Eng. Pat. 13,551. June 1, 1897.

The usual methods are based on the neutralization of chromic acid with ammonia or the decomposition of the potash salt with sulphate of ammonia. In the latter case the bichromate of ammonia was always contaminated with potassium sulphate. The patentee obtains the pure salt by decomposing sodium or calcium bichromates with an ammonium salt. For instance sal ammoniac and either sodium or calcium bichromate are dissolved in molecular proportions in three parts of hot water. The ammonium bichromate, separated by cooling, is removed by a centrifugal and re-crystallized. By another method, calcium bichromate is dissolved in 5 parts of hot water. An equivalent of ammonium sulphate dissolved in a similar quantity of water is added and the whole boiled briskly to render the calcium sulphate granular. After the latter has been filtered off the liquor is boiled down to the crystallizing point. If a chemically pure salt is not essential the ammonium bichromate need not be crystallized out, but can be obtained by simply evaporating to dryness after removing the gypsum.

An Improved Fertilizer. C. Fell, 95, Lichfield-street, Hanley, Staffs. Eng. Pat. 17,151. August 4, 1896.

Sewage sludge is mixed with soot and a chemical added to prevent fungoid growth. Half a-ton of this is mixed with one ton of excreta and urine, to which 20lbs. of vitriol have been added. The whole is dried in any suitable way. By this treatment it is claimed that a fertilizer containing 4% of nitrogen and 20% of phosphate can be produced. The addition of soot may be omitted at will.

NEW CONVEYOR CO., LD.—Last week a party of gentlemen, including gas managers, engineers, and Birmingham City Councillors, visited the works of this Company, known as the Transport Appliance Works, Smethwick, and made a tour of inspection. Luncheon was served in the drawing office. In the course of his reply to the toast of "Success to the Company," Mr. Gilbert Little stated that already they had supplied conveyors and elevators to automatically handle the materials used in the manufacture of Tate's sugar and Cadbury's cocoa. Guinness's stout and Mitchell's ales, the Salt Union's Salt, and Brunner, Mond and Co.'s soda, the United Alkali Co.'s chemicals and the Daily Telegraph's "pulp," Nettlefold's nails and Chance Bros and Co.'s glass, the Government chips at the Royal Arsenal, and the Roburite Co.'s gunpowder, Nobel's dynamite, and Cory Brothers and Co.'s fuel briquettes, Colman's mustard, and Reckitt's starch, the Rand mines gold quartz and Sir Alfred Hickman's basic slag; Peek Frean's biscuits and Burt Boulton and Haywood's sleepers; Odam's manures and Ryland's cotton; Williamson's linoleum and the Waterloo Mills cakes; the London County Council's sewage and Lever Bros.' soap; Edinburgh meal and Midland malt; Glenboig bricks and Brevitt's bottles; the Cube Ice Co.'s blocks and the Co-operative Wholesale Society's bread. They have a number of contracts in hand.

THE COMMERCIAL PREPARATION OF NITRONAPHTHALENES.

THE manufacture of nitronaphthalenes has of recent years acquired considerable importance in the arts, and particularly in the explosive industry. In this industry it has been utilised in various ways and for different purposes. The late Nobel was the first to point out that the addition of nitronaphthalene to a nitroglycerol explosive, such as nitrogelatin, rendered this practically non-sensitive to concussion, and this property has been and is still widely applied to render the handling of nitroglycerol explosives more safe.

In the manufacture of nitro substitution powders, nitronaphthalene soon replaced the more expensive nitrobenzol as a basis, and a large number of patents were taken out for its use with oxidizing agents alone or with an admixture of sensitising agents, such as nitroglycerol, picric acid, etc. A third use was found for nitronaphthalene when it was discovered that it seemingly rendered dynamite "non-freezable." Even a small admixture of nitronaphthalene causes dynamite to remain soft to the touch at low temperatures, and it has therefore been extensively used for the manufacture of non-freezing dynamite. It has been proved that this advantage is only chimerical; the addition of nitronaphthalene in no wise changes the properties which are characteristic of nitroglycerol at low temperatures, but in fact adds a new element of danger, as it makes it impossible for the miner to determine whether the dynamite should be thawed before use.

Still another use of nitronaphthalene was taken advantage of in its property of rendering dynamite "fumeless," but this has not yet been definitely proved. In the manufacture of plastic dynamites it has always been difficult to obtain a nitrocellulose which gelatinizes perfectly in the nitroglycerol. An addition of nitronaphthalene will considerably increase the solvent action of nitroglycerol on nitrocellulose, *i.e.*, even higher nitration degrees than trinitrocellulose may be dissolved when nitronaphthalene is added to the nitroglycerol. The vast importance of this property will be realised by any manufacturer who has a large quantity of the expensive nitrocellulose rejected on account of its insolubility in nitroglycerol.

Almost every manufacturer of explosives has been confronted with the problem of preparing nitronaphthalene in a practical and economical way, but has found that very little of practical value has been published on this important subject.

In speaking of nitronaphthalene, a mixture of the nitronaphthalenes is always meant. When the nitronaphthalene is used in conjunction with nitroglycerol its melting point is of minor importance, but it is desirable to have as high a degree of nitration as possible, since this will retard the momentum of the explosion to a less degree. When used with other sensitising agents, such as picric acid, it is obvious that the melting-point must be below the decomposition-point of this agent. When it is desired to use a higher nitronaphthalene in this connection it may be accomplished by adding a small amount of mononitronaphthalene, as the latter acts as a solvent of the higher nitro derivatives, and they together will dissolve picric acid, nitrocellulose and the like.

The investigations, which form the basis of this paper, were undertaken to determine under what conditions the largest yield of suitable nitronaphthalenes could be obtained. The nitro derivatives of naphthalene are generally obtained either by the action of nitric acid alone or mixtures of nitric and sulphuric acids on naphthalene, or for the highest nitro derivatives by renitration of the lower nitronaphthalenes. It has been suggested at different times to prepare the higher derivatives by the nitration of naphthalene-sulphonic acid similarly to the preparation of nitrophenols from phenolsulphonic acid. To ascertain the practicability of this proposition the following experiments were made:

α -Naphthalene-sulphonic acid was prepared by heating naphthalene to 100°C. for about eight hours with one, two, and three times the amount of sulphuric acid required by theory. A fourth preparation was made, using a large excess of sulphuric acid. This last preparation was the only one which appeared free from naphthalene, the substitution being practically complete. It had no odour, was free from naphthalene crystals, and gave a clear solution with water.

A quantity of each of these preparations corresponding to ten grams naphthalin, was weighed into flasks and treated in one series with forty grams 36° B. nitric acid and in another series with thirty grams of the same acid. This strength acid was chosen because it most nearly represents the waste acid recovered in the regaining works of nitroglycerol plants. The stronger acid 1.42 sp. gr. is so much more expensive that its use is practically out of the question in the commercial preparation of nitronaphthalenes. The action is furthermore so violent when it is used that there is considerable loss of naphthalene through sublimation, and the gain in yield is not proportionally higher. Dilution below 36° B. offers no advantages, as we will show, and is therefore not necessary.

The nitrations were made on a water-bath and were considered complete some time after the red fumes ceased to come off. The resulting

mass was melted under water and washed in this state until acid-free. It was then carefully dried on watch-glasses and weighed. When the nitronaphthalenes are used with nitroglycerol or nitrocellulose, it is very important that it should be neutral, and it may even be slightly alkaline. We have found that this cannot be done with a weak solution of alkali, as it decomposes the product, giving a deep yellow solution. It may, however, be done with a weak solution of sodium carbonate.

The results were:—

SERIES I.—FORTY GRAMS 36° B. NITRIC ACID.

No.	Weight of product.	Colour.	Odour.	Melting point.	Remarks.
1	13'3661	yellow	strong	49°0'	crystalline mass, soft
1A	12'8342	"	"	50°0'	" " "
Mean	13'1002				
2	7'6504	yellow	strong	50°0'	crystalline mass, soft
2A	7'0289	"	"	52°0'	" " "
Mean	7'3397				
3	1'0022	greyish yellow	slight	152°0'	fine silky crystals
3A	0'8288	yellow	"	"	" " "
Mean	0'9155				
4	0'0514	brown yellow	none	"	solid crystalline mass
5	0'4830	pale yellow	"	150°0'	fine crystals
5A	1'3017	"	"	"	"
Mean	0'8923				

SERIES II.—THIRTY GRAMS 36° B. ACID.

No.	Weight of product.	Colour.	Odour.	Melting point.	Remarks.
1	10'6374	orange	strong	54°0'	crystalline mass, soft
2	9'6721	yellow	"	57°0'	" " "
2A	13'6125	orange-yellow	"	52°0'	" " "
Mean	11'6423				
3	0'7623	greyish-yellow	slight	163°0'	bulky fine crystals
3A	0'4714	yellow	"	"	" " "
Mean	0'6169				
4	0'0227	brown	none	"	slightly crystalline mass
5	0'8708	almost white	"	165°0'	crystals
5A	0'3020	pale yellow	"	"	"
Mean	0'5864				

No. 1. Pure naphthalene.

No. 2. Naphthalene treated with the theoretical amount of sulphuric acid.

No. 3. Naphthalene treated with twice the theoretical amount of sulphuric acid.

No. 4. Naphthalene treated with three times the theoretical amount of sulphuric acid.

No. 5. Naphthalene treated with excess sulphuric acid.

It will be seen that the two series correspond quite closely in every respect, and that the yield decreases proportionately with the extent of sulphonation. It is therefore impossible under these conditions to prepare nitronaphthalenes from α -naphthalene-sulphonic acid, although a higher nitration degree is obtained than with pure naphthalene. The products obtained with the latter seem to be practically mononitronaphthalene, and previous sulphonation in the other tests was so incomplete that the advantage to be gained by it is not apparent.

We next turned our attention to the preparation of the nitronaphthalenes from naphthalene direct with a view of determining the mixture of nitric and sulphuric acids which would give the best results. Ten grams of naphthalene were used in each experiment. The sulphuric acid was mixed with the nitric acid before adding it to the naphthalene, and the amount used corresponded to that present in the tests of the first series.

SET. I.—30'23 GRAMS NITRIC ACID USED, CORRESPONDING TO 40 GRAMS 36° B. ACID.

No.	Weight H ₂ SO ₄ .	Weight of product.	Colour.	Odour.	Melting point.	Remarks.
1	8'0	14'3470	orange	strong	86°0'	crystalline mass, soft
1A	8'0	14'2646	"	"	99°0'	ditto
Mean		14'3058				
2	16'0	14'5964	"	"	116°0'	ditto, hard
2A	16'0	14'6278	"	"	124°0'	ditto
Mean		14'6121				
3	24'0	15'2593	yellow	none	136°0'	no visible crystals
3A	24'0	14'8473	"	"	139°0'	hard ditto
Mean		15'0533				
4	52'4	16'9195	light yellow	"	112°5'	ditto
4A	52'4	17'2489	"	"	109°0'	ditto
Mean		17'0847				

SET 2.—22.67 GRAMS NITRIC ACID USED, CORRESPONDING TO 30 GRAMS 36° B. ACID.

Weight No. H ₂ SO ₄	Weight of product.	Colour.	Odour.	Melting-point.	Remarks.
1 8.0	14.2030	orange	strong	72.0°	semi-crystalline, soft
1A 8.0	14.3260	"	"	80.0°	ditto
Mean	14.2645				
2 16.0	13.7764	orange-brown	"	100.0°	ditto
2A 16.0	13.4370	deep orange	"	108.0°	ditto
Mean	13.6067				
3 24.0	15.0656	yellow	slight	129.5°	slightly crystalline, hard.
3A 24.0	15.7075	"	none	136.0°	Ditto.
Mean	15.3866				
4 52.4	17.7699	light yellow	none	108.0°	no visible crystals hard.
4A 52.4	16.9200	"	"	110.0°	Ditto, hard.
Mean	17.3449				

SET 3.—27.87 GRAMS OF NITRIC ACID USED CORRESPONDING TO FORTY GRAMS 34° B. ACID.

Weight No. H ₂ SO ₄	Weight of product.	Colour.	Odour.	Melting-point.	Remarks.
1 8.0	13.4895	orange	strong	84.0°	crystalline mass, soft.
1A 8.0	14.2570	"	"	80.0°	Ditto.
Mean	13.8733				
2 16.0	14.7964	deep orange	slight	97.0°	Ditto.
2A 16.0	15.0230	"	"	94.0°	Ditto.
Mean	14.9097				
3 24.0	16.2178	orange yellow	none	133.0°	slightly crystalline, hard.
4 52.4	16.3830	brown-yellow	none	126.0°	Ditto.
4A 52.4	16.7150	light brown	none	126.0°	Ditto.
Mean	16.5490				

SET 4.—20.90 GRAMS OF NITRIC ACID USED CORRESPONDING TO THIRTY GRAMS 34° B. ACID.

Weight No. H ₂ SO ₄	Weight of product.	Colour.	Odour.	Melting-point.	Remarks.
1 8.0	13.6220	orange	strong	99.0°	crystalline mass, soft.
1A 8.0	13.6460	"	"	85.0°	Ditto.
Mean	13.6340				
2 16.0	13.7861	yellow	none	122.0°	slightly crystalline somewhat soft.
2A 16.0	14.2410	"	"	....	slightly crystalline hard.
Mean	14.0136				
3 24.0	14.4400	choc'l-brown	none	106.0°	no visible crystals hard.
3A 24.0	14.9230	"	"	108.0°	Ditto.
Mean	14.6815				
4 52.4	charred	....	....	....	tarry, semi-liquid
4A 52.5	charred	....	....	....	Ditto.

The highest yield was therefore obtained in every set except No. 4, when an excess of sulphuric acid was used. In No. 4, so little nitric acid was present that the product was decomposed by the sulphuric acid. The degree of nitration, as characterised by the melting-point, also increases with the amount of sulphuric acid present, but an excess has the opposite effect. The amount of nitric acid used in Set 1 has no advantage over the smaller amount used in Set 2, but it is not advisable to use still less acid, especially when higher nitration degrees are desired, since the product is apt to be attacked by the sulphuric acid.

To obtain nitro derivatives of naphthalene for commercial purposes, it is therefore best to nitrate the naphthalene with a mixture of nitric and sulphuric acids, using about three times as much 36° B. acid as naphthalene. The amount of sulphuric acid to be used will vary with the nitration degree desired and ranges from 4:1 (nitric: sulphuric) for low melting products, to 3:2 for the higher derivatives. Too large an excess must be avoided, as it chars the product, producing a tarry useless end-product.—*Jour. Am. Chem. Soc.*

DIAMOND CUT DIAMOND.—For years Germany has been hopelessly at the mercy of the Oil Trust—now the United States Consul at Chemnitz writes to the State Department that Germany is turning its attention to the oil territory in Japan, and that an effort is being made at Tokio to organise a syndicate similar to the Standard Oil Company, for the purpose of increasing production. It is also said that oil has been found in large quantities in Formosa, but it seems doubtful from the information so far to hand if the proposed oil trust intends to deal with the result of these discoveries. German enterprise is not, on the whole, favourably received in the Great Britain of the Pacific.

Official Memoranda.

(From the Board of Trade Journal.)

GERMAN TARE ALLOWANCE ON SALT.

A DESPATCH has been received at the Foreign Office from Sir Frank C. Lascelles, H.M. Ambassador at Berlin, enclosing copy and translation of a Decree of 24th May, 1897, relating to the alteration recently made by the Bundesrath in the tare allowance and duty on salt and brine used for preserving meat, as follows:—

"The Bundesrath, on 13th May last, decreed, with reference to the Annex D to Sec. 1 of the Regulations on tare allowances, to make the following alteration:—

"D. Salt and brine used for the purpose of preserving meat are, in so far as they are denaturalised ("denaturirt"), or wasted while under official control, not to be reckoned in the nett weight of the meat. On entering from the sea, they are to be admitted duty free; and on entering by other routes, they are likewise to enter free if wasted, but, if only naturalised, are liable to a duty of 80 pfennige per 100 kilos. nett. With regard to the denaturalisation, the regulations of the law on the levying of salt duties as well as the rules for carrying out that law will be applied."

CANADIAN WOODPULP INDUSTRY.

It is only in recent years that Canadians have begun to realise that the woodpulp industry is full of promise to their country. The forests of Canada contain a bountiful supply of wood suitable for the manufacture of pulp, and with the exhaustion of supplies in other countries the prospects for the Canadian trade improve. Capital is being invested in this industry in various parts of Ontario, Quebec, and the Maritime Provinces, and with the establishment of mills containing the most improved plant, the pulp industry of Canada will soon become of national importance. The exports from Canada of pulp and wood for the purpose of making pulp for paper manufacture, in the year 1896, reached an aggregate value of \$1,305,500. The exports during the past five years are shown by the following table:—

	Woodpulp.	Wood for Paper Pulp.
1892	\$355,303	\$219,458
1893	455,893	386,092
1894	547,836	393,260
1895	590,874	468,359
1896	675,777	627,865

The United States is Canada's best customer for both woodpulp itself and wood suitable for pulp manufacture, taking in 1896 no less than 88 per cent. of the total exports. England takes the balance, with the exception of a small shipment made to France.

PAPER MILLS IN INDIA.

From statistics issued from the India Office, it appears that in British India there are ten paper mills—four in the Bombay Presidency, four in Bengal, one at Lucknow, and one at Gwalior, which was not worked during the past year. Of the ten, three are private concerns in the Bombay Presidency, one of which has not been at work for many years. The others have an aggregate nominal capital of Rs 627,200. The fibrous materials used for making paper are chiefly rags, babui and munj grasses, straw, jute, and hemp cuttings, and old jute bags and cloth. The quality of the papers made is now very good, and they have a large and increasing sale. Most of the white and blue foolscap, and much of the blotting paper, notepaper, and envelopes used in the Government offices, is now obtained from the Indian mills. The total quantity of paper made in 1896 was about 41 million lbs.; ten years previously it was a little over 17 million lbs.

THE INDIA-RUBBER AND GUTTA-PERCHA TRADE OF GERMANY.

The imports of rubber into Germany for home consumption in the years 1881, 1886, 1891, and 1896 were as follow:—

Years.	lbs.
1881	3,978,040
1886	4,348,080
1891	8,041,880
1896	14,019,720

Two explanations are given of this increased consumption of crude rubber; (1) a greater home demand for rubber manufactures, which heretofore has not been so great *per capita* in Germany as in the United States; and (2) an increase in the export of German rubber goods. The former can only be conjectured, but the latter is demonstrated by official records. The year 1893 broke all preceding records for exports of German rubber goods by quantity; this was followed by slightly smaller figures for two years, after which 1896 marked a heavy advance over all previous figures.

The amount of these goods exported was as follows for 1893, 1895, and 1896:—

Years.	Exports (in lbs.)
1893	7,666,060
1895	7,283,060
1896	8,847,000

It is of interest to note the returns no longer appear under the heading of rubber toys in the Government export tables, though it is not to be presumed that this line of trade has ceased. In the first nine months of 1891 the weight of rubber toys exported was 1,136,520 lbs. After which time there was a gradual decline so long as the classification of toys was retained. The exports of toys for the first half of 1893 reached only 379,920 lbs.

One more fact to be noted is that in 1896 as compared with 1895, there was an increase under nearly every heading of the imports of india-rubber goods into Germany, confirming the opinion that the use of rubber goods in that country is becoming much more general. The total weight of such imports in 1896 was 3,191,320 lbs.; in 1893 the figures were 2,538,360 lbs.

THE USES OF QUEBRACHO.

The United States Consul at Monte Video has sent to his government a report on quebracho, which is of sufficient importance to warrant attention. This wood grows in Upper Argentina and Paraguay in great quantity.

The fact that some few years ago an individual, knowing the good tanning properties of quebracho, made an extract from the chips and offal thereof at the place where these timbers were originally cut for various purposes, and exported this extract to Europe, led to a closer investigation, the result of which is the export of the timber itself for tanning purposes. Now shiploads of quebracho go to Europe, and the export promises to increase from year to year as tanners get better acquainted with its valuable properties.

The entire log is ground up for use into a coarse kind of sawdust, and in this partly consists its great economic value, taking into comparison other tanning materials, where only the bark of a tree furnishes the desired qualities.

It is said that the chemical tanning properties of quebracho, in proportion to oak bark, stand as follows: Quebracho wood, 12 per cent.; oak bark, 10 per cent. (Vide *C. T.*, 514, p. 222.)

As before stated, this timber grows abundantly in the northern part of Argentina and Paraguay. The principal cost and expense to be encountered in making quebracho marketable are in the cutting and shipping of it to the sea coast, firstly, because the wood itself is the hardest wood known, so that extra-tempered tools must be used in cutting it down, and, secondly, it is the heaviest wood known, considerably outweighing ebony, and therefore expensive to handle and transport.

Quebracho is a wood never known to rot; it withstands the water and underground use as well as air, and gets harder from year to year. Extra-tempered tools, as stated, must be used in working it when green, and, when old, it becomes almost like metal. It is of a dark cherry-red colour, and takes a most beautiful polish. Furniture made of quebracho will almost last for ever, and is exceedingly beautiful.

Quebracho is principally used in Uruguay for fencing poles, because of its lasting quality, and the larger timbers find ready use for water constructions, &c.

When used for tanning purposes the logs are cut up into lengths of about 5 or 6 feet. These are put before a circular saw and cut up into strips of about 3 by 3 inches, and these pieces again are put into a machine consisting of a solid steel disc with numbers of projecting teeth—somewhat resembling the solid iron-wheel cornsheller—which runs with great speed, and cuts these pieces up into a coarse kind of sawdust, which is taken up by an endless belt of cups that conveys the now-ready tanning material to its place of deposit.

The markets for quebracho so far are Monte Video, Buenos Ayres, and Rosario, and prices range from £2 to £3 per ton, according to demand and to the time of year—that is, to the high or low state of the Plate and other rivers by which these timbers are brought down.

In all these trading centres are men who either own such timber lands themselves, and have their own steam-tugs and flat-boats to freight timbers to their places of business, or they make contracts with such landowners and send their own crews of men to cut it, and fetch it down with their own conveyances.

In many cases the timbers are even cut on lands seemingly having no owners at all, and no one takes the trouble of making inquiries as to the ownership of such lands or timber cut thereon.

There is no doubt that, with the increased demand for quebracho, these lands will become very valuable, and, taking the present low prices of them into consideration, a lucrative investment might suggest itself, especially where investors would be in a position to utilise the product.

RIBBLE JOINT COMMITTEE.

THE monthly meeting of the Ribble Joint Committee was held in the County Hall, Preston, on Monday, last week; Sir J. T. Hibbert presiding.

The Chief Inspector (Mr. W. Naylor) submitted a lengthy report containing references to a number of local authorities and manufacturing firms and their efforts to improve the effluents flowing into the Ribble and its tributaries. In most instances he recommended a further extension of time, and the committee acted upon his suggestions. To the Withnell Urban District Council, Chorley borough, and Barrowford Urban three months' time was given, and to the Nelson municipal borough two months. Three months' time was granted to Burnley Rural District Council, and the clerk directed to write to the authorities in respect to Wheatley-lane. The matters in respect to various authorities were further adjourned as follows:—Padiham Urban District Council, a complaint and three months; Rishton Urban, four months; Darwen municipal, three months and a copy of the report; Walton-le-Dale Urban, four months and a complaint; Fulwood Urban, four months; Blackrod Urban, six months; Horwich Urban, two months; and Ince Urban, two months. Further adjournments were granted in regard to several manufacturers. In the case of Messrs. F. W. Grafton and Co., dyers, Accrington, an adjournment of two months was granted; but the clerk was directed to take proceedings if the work was not done by that time or cause shown. Messrs. Tootell and Kershaw, dyers, Accrington, were given two months and show cause. All the other matters were adjourned with various instructions. The Deputy Clerk said the Finance Sub-Committee recommended the appointment of Mr. R. F. Easterby as auditor to the Committee, at a salary of 12gs. per annum, in the place of the late Mr. Johnson.

The recommendation was acted upon, and Mr. Easterby appointed auditor to the Joint Committee.

THE FRECKLETON ACTION.

The Deputy Clerk read a letter from the Preston Urban Authority enclosing a copy of a resolution passed by the Authority. It was to the effect that application be made to the Ribble Joint Committee for a contribution towards the heavy expenses incurred by the Authority in connection with the recent action at law with regard to the sewage at Freckleton. The Authority wished to know also when a deputation could wait on the Joint Committee.

The Chairman: Well, I suppose you won't object to hear them, but I don't think we can legally do anything.

The Deputy Clerk: No sir; we have no legal power to do anything in the matter.

A MORE OPEN MIND.

The Chairman said there was one thing he thought he ought to mention to the Committee. That was that in the week before last he had been instrumental in bringing before the Local Government Board the matter of filtration, and he had suggested that the Joint Committee should have a more open mind in dealing with authorities in regard to the disposal of sewage. In many instances it was very difficult to obtain land for the purpose. They were told that the views of the local authorities would be considered, and last week Mr. Russell had informed him that already a committee had been formed to take the matter into consideration.

It was left to the chairman to represent the Joint Committee in regard to the matter.

The Committee then adjourned and it was understood that they will not meet in September, as many members would be taking their holidays then.

CHILI AND THE NITRATE INDUSTRY.

CHILI is beginning to be alarmed at the serious depression in the nitrate trade, and not without reason. Nearly half her revenue is derived from the nitrate duties, and, as during the first three months of this year no nitrate was exported, it is difficult to see how a considerable deficit is to be avoided. The question will, no doubt, be fully discussed in Congress, which is now, or shortly will be, in session. It is stated that the Government intends introducing stringent economies; but if the deficit be as large as is anticipated in some quarters, the expenditure will require cutting down with an axe rather than a pruning knife. Shareholders in the nitrate companies will be pleased to learn that the importance of discovering new markets has at last been realised by the Government. The Ministry has promised at least £15,000., which may possibly be increased to £40,000. towards that object. *The duty has been taken off some sample cargoes which have been sent to China and Japan, while special agents have been sent to the United States with a view of increasing the use of nitrate in that country.* This is certainly a step in the right direction. There is abundance of worn-out land, both in the States and in Canada, which would be none the worse for a tonic in the shape of nitrate.—*Financial News.*

THE MANCHESTER SEWAGE SCHEME.

At the meeting of the Manchester City Council on Wednesday, Mr. Saxon, in moving the adoption of the minutes of the Rivers Committee, said he wished to call attention to the City Surveyor's reports and the proceedings thereupon. The City Surveyor had been requested to furnish the Committee with an approximate estimate of the cost of the provision of filters, and the cost of working them, for dealing with the whole volume of the sewage of the city, based upon ascertained facts on previous experiments with the two experimental filters arranged by Sir Henry Roscoe. The City Surveyor had reported that he had made a survey of the land at Davyhulme, and prepared a plan showing how an area of two acres near the existing tanks could be laid out for the purpose of artificial filtration. He had also prepared an estimate of the cost of constructing filters. In his report of the 20th August, 1896, the future dry-weather flow of sewage was estimated at 26 million gallons per day, and with filters of the construction recommended by Sir Henry Roscoe each acre was assumed to be capable of treating 800,000 gallons per 24 hours, representing a total net area of $32\frac{1}{2}$ acres of filter beds. A margin was allowed for rest, renewal, cleaning, etc., making a total area of at least 40 acres of artificial filters. The experience gained from the continued experiments with the model filters at Davyhulme led the City Surveyor to believe that 800,000 gallons per acre would be the maximum quantity of Manchester sewage that could be dealt with under favourable circumstances, and he therefore considered that for the purposes of this estimate 600,000 gallons per acre would be sufficient, especially having in view the fact that the character of the sewage had altered since the date of Sir Henry Roscoe's report, and a further alteration was likely to take place when the sewage of Clayton and other districts had been intercepted. The City Surveyor was therefore of opinion that the area of the artificial filters to be provided should be increased from 40 to 50 acres, which, at an average cost of £5,502. per acre, would amount to £275,000. The cost of working the model filters did not form any guide to the cost of working filters on a large scale, and the City Surveyor was unable therefore to give any closer estimate of the annual cost than that mentioned in his report of August 26, 1896—viz., £5,220. per annum. It was moved in the sub-committee that the Rivers Committee be recommended to approve of the proposed two experimental filters, but the motion was negatived. The Rivers Committee, on the matter coming before them, asked the City Surveyor to report to the Sub-committee whether the proposed two experimental filters of one acre each could be reduced to half an acre or less without detriment to the value of the experiments. The City Surveyor reported that in his opinion four filters, having an area of a quarter of an acre each, would be sufficient to test the value of crushed clinker (recommended by Sir H. Roscoe) as a filtering medium. The plan he had already submitted for filters having a total area of two acres could be constructed in sections. If the first four sections were now built, the further sections could be added at any time should it be thought advisable to extend the area. The estimated cost of four filters, having an area of a quarter of an acre each, would be £6,317. On this report a motion was made in the Sub-committee that the construction of the four experimental filters suggested should be recommended to the Rivers Committee, but the motion was negatived. Proceeding with his remarks, Mr. Saxon said it was a mistake to say there was a deadlock in the Committee.

THERE HAD BEEN NO DEADLOCK

except that arising from the fact that one-half of the Rivers Committee were in favour of the prosecution of further experiments in artificial filtration, whilst the other half were opposed to this course, not only on account of its cost, but also because they believed it would eventually involve the adoption of a scheme of artificial filtration.

From the information obtained from their previous experiments in artificial filtration, it was estimated that the first cost of such a scheme would be £275,000. The working of the scheme would cost £5,220. a year, and the filters would have to be renewed every four years at a third of the original outlay. This would mean an annual outlay of £31,820, and to such a large expenditure the majority of the Committee were opposed. The division of opinion amongst the members of the Committee led the Town Clerk to write to the Mersey and Irwell Joint Committee asking for a further extension of time of six months to enable the Committee to further consider the matter. The Mersey and Irwell Joint Committee had agreed to an extension of three months. In the meantime there had been a meeting of the Purification Sub-committee, and, after considering the whole matter, the Sub-committee unanimously decided to recommend to the Rivers Committee that the effluent, after chemical treatment, should be taken to the tidal waters of the Mersey, near Randall's Sluices.—(Hear, hear). Considering the nature and volume of the Manchester sewage, it was felt that this was the best alternative that could be adopted. Means would no doubt be found to modify, if not altogether to overcome, the objections which the Ship Canal raised to that scheme last year. The matter would, of course, come before the Council later on.

Mr. Alderman Griffin seconded the motion for the adoption of the minutes. The committee, he said, were working well together in the interest of the ratepayers.

Sir John Harwood said it was quite clear that if statements of a damaging character were made in the newspapers as to the cost of work being done by the Committee, it was a matter which affected the whole Council, and a reply would have to be made at some time or other. He had consulted with the Town Clerk, who was of opinion that it would be unwise for the Council to go into the matter now. He had always been of opinion—he was referring now to the work in connection with the construction of the sewers—that it would be very much better to refer the matter to an engineer than to take it into the public courts. The judges could not possibly be acquainted with the merits of the case. That was another reason why he thought the matter should be allowed to stand over. Of course, as he had said, they must have an answer at some time in regard to the assertions made as to the unnecessary cost of work that was being done. The public demanded it. It seemed to him no better man could be found to refer the matter to than Sir Benjamin Baker.

The Town Clerk said he had advised the chairman and the deputy chairman of the Committee that it would be out of order to open up the question at this meeting because at least two of the contracts were *sub judice*.

Mr. Sutton rose to move an amendment with regard to the question of experimental filters. He said the Rivers Committee had been dipping their hands very deeply into the ratepayers' pockets. They were asking for another quarter of a million for experimental purposes. It seemed to him that the time had gone by for experimenting. If the Committee were granted this £275,000, he believed that in a short time they would come back to the Council for another quarter of a million.

Mr. Saxon, interposing, said Mr. Sutton was confusing two matters. He was going to move an amendment with regard to artificial filtration, and yet he was speaking about the sewer defects.

The Lord Mayor: What is your amendment, Mr. Sutton?

Mr. Sutton: That the proceedings of the Rivers Committee be approved with the exception of those referring to experimental filters.

The Town Clerk pointed out that the proceedings of the Sub-committee had not yet been before the Rivers Committee, and would come again before the Council. The object in bringing the matter forward now was to give notice of what was in the mind of the Sub-committee, in order that it might be properly discussed when the report came up.

Mr. Sutton said his object was to draw the attention of the public to the thousands of pounds which had been spent on scamped work.

The Lord Mayor said Mr. Sutton was not in order in his remarks. He must accept the advice of the Town Clerk. The subject would come up again.

Mr. Saxon and Mr. M'Dougall explained that no recommendation was yet before the Rivers Committee. The matter was put on the agenda in order that members might have the information and be able to think about it.

Mr. Sutton: In that case I am out of order.

THE SALT TRADE.

THE shipments for July do not materially differ in the aggregate from those of the corresponding month in 1896. In the United States of America a very heavy duty has again been placed on imported salt, so that a marked shrinkage in Liverpool shipments to that market would seem to be inevitable. The figures for July giving the exports to the United States show a decrease of from 7,419 tons to 6,051 tons. Decreases are also shown to British North America, to Africa, Australasia, and to the rest of Europe, while increases for the month are shown to the West Indies, Central and South America, Asia, and to other ports in the United Kingdom, the total exports being 72,424 tons, against 74,715 tons in July, 1896. The figures for last month include 45,119 tons from Liverpool, against 48,052 tons in July, 1896, and 27,305 tons from Runcorn and Weston, compared with 26,663 tons. The shipments previous to July this year generally show considerable increases, but the total is left much the same as last year in consequence of the great falling off in the shipments to Scotland, which were 29,222 tons during the first half of the year, compared with 45,805 tons in the corresponding period of last year. The chief increases were to the United States (57,583 tons, compared with 43,995 tons), Africa (18,428 tons, compared with 16,356 tons), Asia (104,676 tons, compared with 79,396 tons), and Australasia (9,609 tons, against 7,591 tons). The total shipments for the first half of this year were 307,377 tons, against 290,541 tons for the first six months of 1896. Of these Liverpool shipped 248,610 tons, compared with 211,130 tons; and Runcorn and Weston 58,767 tons, against 79,411 tons.

Trade Notes.

THE ALGERIAN PHOSPHATE CONCESSIONS.—The Council of State has annulled the decree of the Prefect of Constantine, which declared the convention between the Commune of Morsoll and the phosphate concessionaires to be null and void.

"SAFETY" MATCHES WHICH WERE NOT SAFE.—A curious action for personal injuries was heard recently at the Bromley (Kent) County Court, a Miss Claxton, of Beckenham, suing a grocer named Booth, of the same place, for £50. damages for injuries sustained through the ignition of a box of "safety" matches, warranted to strike only on the box. The matches were purchased from the defendant's shop in April last, and when the plaintiff was in the act of opening a box the matches suddenly ignited, inflicting such injuries that for six weeks Miss Claxton was incapacitated from carrying on her business. The matches, some of which were produced in court, were of Swedish make, and the "Windmill" brand, and were supplied to the defendant by Messrs. Bryant and May, it being explained on the firm's behalf that they did occasionally supply foreign matches in this way, but only "to oblige a customer." For the defence it was urged that the term "safety matches" was merely a trade designation, and implied no legal warranty. His Honour held, however, that "safety matches" had come to be generally considered as matches striking only on the box, and therefore as being safe in that respect. The way in which these matches had ignited was quite inconsistent with such a description. He gave judgment for £21. 10s., with costs on the higher scale between £20. and £50.

"INTOXICATING" HERB BEER.—On Wednesday, at Rochdale, James Shaw, shopkeeper, No. 279, Manchester-road; John Goffe, Stanley-street; and Mary Hinley, of Toad Lane, were charged with selling "non-intoxicating" drinks, containing over 2 per cent. of alcohol, contrary to law. Mr. R. D. Maddock, of Heywood, appeared for the defendants, and for Messrs. W. Noble & Co., Limited, manufacturers of herb drink. Mr. A. E. Sheppard, supervisor, who conducted the prosecution, called Mr. James Robins, the analyst, who stated that drink sold by James Shaw and Mary Hinley, which went by the name of "burdock and dandelion beer," contained 4½ per cent. of proof spirits in it, which was 2½ per cent. more than was allowed by the Act of Parliament. The winter or dandelion stout sold by Goffe contained 4.9 per cent. of alcohol.—Cross-examined by Mr. Maddock: If these drinks were kept in the bottles, especially in hot weather, the alcoholic strength increased. No spirit was put into it at the time it was made.—In reply to Mr. Hartley, the magistrates' clerk, Mr. Sheppard said that the beer sold by publicans in Rochdale contained from 4 to 8½ per cent. of alcohol, bottled beer from 10 to 11 per cent., and old bottled ale from 13 to 14 per cent.—Mr. Maddock said he would admit that the three defendants had been selling the liquor above the strength, but they had committed the offence unknowingly. Messrs. W. Noble & Co., Heywood, were the manufacturers of it. It had increased in strength through being kept in the bottles too long.—Mr. Sheppard, addressing the magistrates, said he would have preferred, and it would have been more satisfactory, if he could have summoned the manufacturer of this liquor instead of the defendants, but the manufacturers were not liable.—A fine of 10s. 6d. and costs was imposed in each case.

INSTITUTE OF CHEMISTRY.—*July Examinations, 1897.*—Examiners: Professor Percy F. Frankland, F.R.S., F.I.C., and Otto Hehner, Esq., F.I.C. The following are the names of candidates who passed the *practical examination for the associateship*:—Bruce, James, B.Sc. (London), Royal College of Science, London; Burrows, Harry, Laboratories of the Pharmaceutical Society and Royal College of Science, London, and registered student under Professor Wyndham R. Dunstan, F.R.S., F.I.C.; Grimwood, Robert George, Finsbury Technical College, London, and registered student under R. Grimwood, Esq., F.I.C.; Lyle, Robert Ferris, Glasgow and West of Scotland Technical College, Glasgow, and registered student under T. L. Patterson, Esq., F.I.C.; Styles, Robert Curling, Assoc. R.C.Sc. (London), Royal College of Science, London, and registered student under the late Dr. A. J. Bernays, F.I.C.; White, Arthur Lee, Yorkshire College, Leeds, and Royal College of Science, London. *Intermediate Examination*:—Bowen, William, Mason College, Birmingham; Calvert, Harry Thornton, B.Sc. (Vict.), Yorkshire College, Leeds; Dewar, Alexander Hugh, Glasgow and West of Scotland Technical College; Entwistle, Albert Lucas, Owens College, Manchester, and registered student under T. J. Hutchinson, Esq., F.I.C.; Warren, Bertram William John, Mason College, Birmingham, and Finsbury Technical College, London. *Final Examination for the Associateship*:—General Inorganic Chemistry: Berry, Reginald Arthur, Cambridge University; Hembrough, James, Assoc. R.C.Sc. (London), Merchant Venturers' Technical College, Bristol, and Royal College of Science, London; Littlefield, Robert Dexter, University College, London, and with Dr. John Muter, F.I.C., and W. A. H.

Naylor, Esq., F.I.C.; West, Charles Alfred, Assoc. R.C.Sc. (London), Royal College of Science, London. The Chemistry of Metals and Alloys: Bolt, Frederick John, Royal School of Mines, London, assistant to Edward Riley, Esq., F.I.C.; Foster, John Alfred, assistant Admiralty Chemist, Portsmouth Dockyard; Parkes, Albert Edward, Mason College, Birmingham, and under T. Vaughan Hughes, Esq., F.I.C. Organic Chemistry: Granger, James Darnell, Ph.D. (Berlin), University College, Nottingham, and Berlin University; Morgan, Gilbert Thomas, B.Sc. (London), Finsbury Technical College, and Royal College of Science, London; Sugden, John Henry, B.Sc. (Vict.), Yorkshire College, Leeds. The Chemistry of Water, Food, and Drugs: Richardson, Frederic William, consulting analytical chemist to the County Borough of Bradford.—Issued by order of the Council, J. Millar Thomson, hon. registrar, 30, Bloomsbury-square, London, W.C., August 13th, 1897.

FAILURE IN THE CHEMICAL TRADE AT BLACKBURN.—At the Blackburn Bankruptcy Court, on Wednesday, George William Stones, formerly trading as the Livesey Chemical Works, attended for his adjourned public examination. In answer to the Official Receiver, the debtor said he was a solicitor, but had not practised for some years. He started in the chemical business in 1890 with £300 capital, and he had besides about £12,000 in property, exclusive of a post-nuptial settlement made by his father. The interest, which now ceased on account of his insolvency, was worth about £200 a year. Questioned as to the chemical business, debtor said it was an existing firm when he joined it, being carried on by Mr. Frank Coddington and a friend. The debtor and his cousin bought shares, and ultimately the debtor took over the whole concern. It had practically ceased to be a company, though it had never been wound up. An investigation would have been necessary to enable debtor to tell what was his position. The Official Receiver questioned the debtor at great length concerning his dealings with certain deeds relating to property several years ago, and the examination was further adjourned.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols remain at 2s. for both 90's and 50/90's. Carbolic acids are quiet and unchanged in value, 60% crude being worth about 2s., while 40% crystals remain at 7½d. and liquid at 1s. Solvent naphtha is in fairly good request, and is firm at 1s. 6d. to 1s. 7d.; crude nominal at 11d. Anthracene is still quoted 5d. for 30% A and 5d. for B, without receiving much attention. Creosote is about the only product showing any life, being in good demand at 2½d. to 3d. Pitch is most erratic, business having been done at 17s. up to 22s. f.o.b. East coast.

Sulphate of ammonia continues steady, with a fair demand. Shipments are well maintained, and the market seems inclined to respond a little by an advance. Closing values are:—Beckton £7. 8s. 9d., London outside makes £7. 10s., Liverpool £7. 11s. 3d., Hull and Leith £7. 10s. to £7. 11s. 3d., all prompt. Nitrate dull at 7s. 4½d. to 7s. 6d. per cwt.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali market business continues brisk. There is good export demand for caustic soda, and full prices are maintained, quotations for spot delivery being as follow:—F.o.b. Liverpool, 77%, £8. 15s.; 74%, £8.; 70%, £7. 2s. 6d.; 60%, £6. 2s. 6d., nett, per ton. Ammonia alkali unchanged, either for prompt or forward delivery. Bleaching powder in strong request at £6. 10s. to £6. 12s. 6d. f.o.b., and £6. 7s. 6d. f.o.r. makers' works. Chlorates are quiet: Potash and soda, 4d. and 4¾d. respectively. Saltcake moving more freely, and price firmer at 19s. to 20s. f.o.r. There is a fair amount of inquiry for business over 1898, but no actual business is yet reported. Soda crystals and bicarbonate keep a steady course, and prices are unaltered. Sulphur £4. 12s. 6d., f.o.r. In white powdered arsenic there is more business doing at £22. to £22. 5s., f.o.r. Garston, London, etc. Sulphate of copper rather dearer at £16. to £16. 5s., f.o.b. Prussiate of potash 5¾d. per lb. Cyanide, 98/99%, 10¾d. per lb. In ammonia salts prices all round are depressed—muriate continues at £18., carbonate (lump) at 3d. per lb. Potash, caustic and carbonate, is steady in price, and there is a fair demand. Green copperas still in good request, and price firmer. Acetate of lime, brown, £4. 17s. 6d. to £5., c.i.f. with rather firmer tendency. Other acetates quiet, and prices unchanged. Lead salts all round are firmer, owing to the advance in the metal. Zinc oxides are also dearer. Nitrate of soda still offers at 7s. 6d. to 7s. 7½d. Generally, business continues quiet.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron firm: Scotch warrants closed at 44s. 8d.; Middlesbro', 40s. 10d. cash; and hematite, 47s. 3½d. Copper easy: Chili bars, G.O.B.'s and G.M.B.'s, closed at £49. 5s. cash, and £49. 7s. 6d. to £49. 12s. 6d. three months. Tin quiet: Straits closed at £61. 13s. 9d. to £62. 3s. 9d. cash, and £62. 5s. to £62. 15s. three months; Australian, £62. 17s. 6d. English ingots, £65. 15s. Lead firm: Spanish, £12. 11s. 3d. to £12. 12s. 6d. English, £12. 15s. Silesian spelter, ordinary, £17. 5s. Nickel, 1s. 2½d. Antimony, £29. 10s. to £30. Quicksilver: First hands, £6. 17s. 6d.; second hands, £6. 16s. 6d. Copper shares steady: Cape, 2½ to 2⅞; Copiapo, 2⅞ to 2¼; Libiola, 2⅞ to 2⅞; Mason and Barry, 2¼ to 3; Rio Tinto, 23 to 23½; Tharsis, 5½ to 6½.

GLASGOW, WEDNESDAY.—Market steady, and a moderate business. Scotch done at 44s. 9d. and 44s. 8½d. cash, and 44s. 10d. to 44s. 10½d., one month; buyers, 44s. 8d. cash; sellers ½d. more. Cleveland, buyers, 40s. 10d. cash; sellers, 40s. 11d. Cumberland hematite done at 47s. 4d. cash, and 47s. 6d. one month; buyers, 47s. 3½d. cash; sellers, 1d. higher. Middlesbrough hematite, buyers, 48s. 3d. cash; sellers, 47s. 9d.

REPORT ON MANURE MATERIAL.

The market still continues quiet, without any special feature to comment upon. For mineral phosphates there is no change in the quotations, which remain 5½d. per unit, in cargoes, c.i.f., for 75.80% Florida rock, and 4¾d. per unit for South Carolina, and 58/63% Algerian. There is no business reported in River Plate bones, and value may therefore be considered as about £3. 12s. 6d. per ton, ex. quays, and same price would be accepted for crushed Kurrahee bones, but for a good line something less would no doubt be accepted. For autumn shipment £3 15s. per ton is asked. Nitrate of soda is very quiet, but steady. On spot, quotations for ordinary quality are 7s. 4½d., and for good to fine, 7s. 7½d. to 7s. 9d. per cwt.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is moving more freely, and business has been done at £21. for Lagos, Benin £18. 15s., and hard oils £18. 7s. 6d. Olive being in short supply is firm, with Seville at £29. 10s. to £30. 10s. per tun. The position of linseed is well maintained at 17s. 6d. to 18s. per cwt. for Liverpool makes in export casks. Cottonseed steady. Liverpool refined 16s. 6d. to 17s. cwt. (not £1. as quoted by printer's error last week). Castor oil is steady with sellers firm on spot at 3½d. for good seconds Calcutta and Madras. French (first pressure) 3½d. to 3½d. per lb. Tallow is in moderate request at steady prices. Resin is moving fairly well on spot at full quotations. Spirits of turpentine are rather quieter at 21s. 6d. cwt. Petroleum featureless. American 5¼d. to 7d., and Russian refined 5¼d. per gallon.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire—common £10., medium £12., best £15.; Derbyshire—common 40s., medium 50s., best 60s.; Welsh—best 90s., seconds 50s., and common 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead: £16. Red lead unchanged. Venetian red: £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide: £22. 10s. to £25.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The position of all seed oils here is very strong, a position to which is contributed several causes, the principal of which are the high prices and scarcity of seed upon this side, and so very few mills crushing, owing to a slackness in demand for cakes, which is seasonable. The present price of linseed oil (spot) is quoted 15s. 9d. to 16s., naked, the same being the forward quotation to the end of the year. Boiled and refined are in fair demand—£1. to £1. 10s. per ton extra. Refined cottonseed oil does not hold the same strong position as linseed, the spot quotation being 14s. 6d. per cwt., the same being the quotation to end of October; forward, November-April, 14s. 3d., naked. Filtered refined £1. to £1. 5s. per ton extra, whilst crude is quoted 13s. 1½d. per cwt., spot. Barrels and ordinary casks £1. per ton extra. The imports of linseed to date against the same period a year ago have been 392,108 qrs. against 465,835 qrs.; of cottonseed, 125,609 tons, against 98,109 tons. Spirits of turpentine 21s. 3d. to 21s. 6d. per cwt. Olive oil is held very firm at the advance, but

demand is quiet—quoted £31. to £34. per tun. Italian olive (lamps), 62% fatty acids, £16. 10s. per ton. Imported Oleines are quiet and unchanged. Cod oils £16. to £18. per ton. Castor oil from 3½d. per lb.

CAKES.—The principal mills are closed or running very short time. Linseed cakes steady, 95% pure, £6. 17s. 6d.; oil cakes, £5. 17s. 6d.; Americans, none, Russians, £6. 12s. 6d.; cotton cakes firmer, best makes, £4. to £4. 2s. 6d., spot, and £4. to £4. 2s. 6d. for November-April—seconds 2s. 6d. per ton less. Rape cakes (Black Sea), £3. 12s. 6d.

PAINTS.—Makers are fairly well employed, without any change of note in quotations. Mineral colours, £4. to £8. Ordinary colours in oil from £10. Imperial black varnish £5, in barrels. Oak varnish from 5s. per gallon.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

With regard to home-produced burning oils, and their market position for the new consumptive season about to be commenced, the makers have given over attempting a common price basis, as formerly done every year. This year the difficulties and differences of opinion have been insuperable, and at last week's final meeting all effort at agreement was abandoned. It is for every maker to sell as high as he can, or as low as he cares to. Below the prices put a halfpenny per gallon under the figures of last season. The strong makers will endeavour to make a stand at that, but the weaker members may be forced to go lower, through the necessity of making quick business. Solid paraffins remain as before. The companies, however, may yet agree as to their position, as comprehending the whole of the season 1897-98. Sulphate of ammonia keeps pretty steady at £7. 10s. prompt Leith; still nothing moving forward. General chemicals' market retains late improvement. Lead and copper products are somewhat firmer. Others steady.

Chief prices current are:—Soda crystals, £2. 12s. 6d., nett, Tyne, soda ash, 48/62°, £4. 2s. 6d. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £5. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8., 70/72° £7. 2s. 6d., 60/62° £6. 2s. 6d., and cream 60/62° £6., all nett, Liverpool; bleaching powder, 35/37°, £6. 10s. nett, Tyne; saltcake, 19s. to 20s.; borax, English, refined, £14. 15s. and boracic acid, £26, nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4d. less 5%, any port; nitrate of soda, 7s. 6d. to 7s. 9d.; sulphate of ammonia, £7. 10s., prompt, f.o.b. Leith; sal ammoniac, first and second white, £33. and £31. nett any port; sulphate of copper, £16., less 5% Liverpool; paraffin scale, hard, 1¼d. to 1½d., and soft, 1½d. per lb.; paraffin wax, 120° semi-refined, 1¼d. to 2d. per lb.; paraffin spirit (naphtha), 6d. per gallon; paraffin oil (burning), No. 1, 5¼d., and crystal, 6d., at Glasgow and other big centres, for Scotch buyers (English sales ½d. to ¾d. lower); ditto (lubricating) 86½° £5. to £5. 5s., 88½° £5. 15s. to £6. 5s., and 89/89½° £6. 10s. to £7. Week's imports of sugar at Greenock were 16,276 bags beet unrefined.

TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals are quiet in tone, and practically no change in prices. Sulphur is scarce at £4. 15s. per ton, to £5. per ton; caustic, 76/77%, £9., and 70%, £7. 10s. per ton. Soda crystals firm and scarce at £2. 12s. 6d. per ton, gross weight, locally.

Bleaching powder, softs, £6. 10s. per ton, nett; hards, £6. 15s. per ton, nett; caustic soda, 76/77%, £9. per ton, nett; do., 70%, £7. 10s. per ton, nett; recovered sulphur, 2 cwt. bags, £5. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. 6d. per ton, nett; do., 52%, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, gross weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95% crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham salt is steady at 9s. to 9s. 6d. per ton, f.o.b. Tees.

COALS.—Trade continues very steady, and the large out-put is well taken up. Coke is firm for both export and local consumption. Best Northumbrian steam, 8s. 9d. to 9s. per ton; second qualities, 7s. 9d. to 8s. per ton; small steam, 3s. 9d. to 4s. per ton; gas coals, 7s. 3d. to 7s. 6d. per ton; bunker coals, 7s. 6d. to 8s. per ton; coke, very firm, 21s. to 22s.

New Companies.

Acetylene Gas Light, Power, and Calcium Carbide Co., Ltd.—CAPITAL £80,000., in £1. shares. This company has been formed to adopt an agreement with J. Frazer, and to carry on the business of gas and calcium carbide manufacturers, motor and cycle manufacturers, electricians, engineers, machinists, fitters, etc. The subscribers are:—C. Crastin, 16, Tollington-road, Holloway, London, N., engineer; G. Baldwin, 83, Falkland-road, Harringay, N., chemist; F. Edwards, 113, Alderney-street, Warwick-square, S.W., engineer; W. Davison, 1, Queen's Down-road, Clapton, accountant; M. Clifford, 114, Tollington Park, N., accountant; J. Warren, 63, The Grove, Camberwell, S.E., clerk; A. G. Harrison, 47, Sydney-road, Hornsey, N., clerk.

Droydsden Rubber Works, Ltd.—CAPITAL £100,000., in £1. shares (25,000 pref.). This company has been formed to adopt a certain agreement with "Brainards' Pneumatic Tyre Machine Syndicate, Ltd.," and to manufacture, sell, and deal in pneumatic and other tyres and wheels, cycles, cycle components, hose-piping, railway brake couplings, india-rubber goods, etc. The subscribers are:—H. Steele, 14, Ridgefield, Manchester, accountant; F. W. Holliday, 40, Marsland street, Hightown, traveller; H. Hellewell, 4, North Corridor, Royal Exchange, Manchester, engineer; T. C. Travis, Princess-road, Urmston, accountant; G. P. Hodgson, 22, Tib-lane, Manchester, stationer; H. Baker, 1, Edward-street, Prestwich, cashier; T. Brockwell, 16, Thomas-street, Cheetham, Manchester, clerk.

Ellam, Jones, and Co., Ltd.—CAPITAL £16,000., in £5. shares. This company has been formed to acquire and carry on the business of manufacture of colours, paints, varnishes, barytes, whiting, emery, emery cloth, and glass paper, carried on by R. Pybus, at Derby, as "Ellam, Jones, and Co.," and to adopt a certain agreement. The subscribers are:—R. Pybus, F.R.G.S., Old Lodge, Markeaton, Derby, colour manufacturer; J. Pakeman, The Firs, Derby, cheese factor; Mrs. S. Pybus, Old Lodge, Markeaton, Derby; Mrs. E. Pakeman, The Firs, Derby; Miss M. Pakeman, The Firs, Derby; Miss E. Pakeman, The Firs, Derby. Registered office: Markeaton Mill, Markeaton-street, Derby.

Vegetable Parchment and Chemical Co., Ltd.—CAPITAL £50,000., in £1. shares. This company has been formed to enter into a certain agreement and to manufacture, sell, and deal in vegetable parchment, grease proof and waterproof paper, silkite or patent hardening crystal, blanc fixe, sulphate of iron, sulphate of magnesia, sulphate of alumina, etc. The subscribers are:—G. Edwards, Carlton Hill, Putney Hill, London, S.W., engineer; L. Thomas, 44, Parkfield, Liverpool, director; H. Owen, Westraydon, Blundellsands, merchant; F. W. Cornelius, Blundellsands, merchant; E. J. Cottam, 3, Rumford-street, Liverpool, cotton broker; F. Harrison, Balholm, Blundellsands, cotton broker; H. J. Pollet, 13, Rumford-street, Liverpool, cotton broker.

West Norfolk Farmers' Manure and Chemical Co., Ltd.—CAPITAL £75,000., in £1. shares. This company has been formed to acquire the business carried on by a company of the same name at King's Lynn, Norfolk, and elsewhere, to adopt three agreements, and to manufacture, sell, and deal in artificial manures, cattle foods, and chemicals. The subscribers are:—J. B. Ellis, West Balsham, Walsingham, farmer; T. Brown, Hunstanton, chemist; H. E. Ringer, Swaffham, farmer; E. W. Betts, Babingley, King's Lynn, farmer; Mrs. G. Heading, Thornham; Mrs. A. Knight, Wimbotcham; E. E. Betts, Grantchester, Cambs., gentleman; H. C. Brown, King's Lynn, chemist.

IMPORTS OF CHEMICAL PRODUCTS

AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM

LONDON.

Week ending August 7th.

Acetate of Lime—

U. States 354 bgs. Lister & Biggs
" 554 R. E. Drummond

Acetic Acid

Holland, 55 pks. Little & Johnston
" 100 R. W. Greeff & Co.

Acetone—

France, 13 drs. F. Bryant

Alkali—

Belgium, 116 c. T. H. Lee
" 500 W. G. Jacobs
Germany, 106 J. Barber & Co.

Alum—

Holland, 8 cks. J. Owen
" 30 Ohlenschlager Bros.

Ammonia—

Holland, 54 pks. H. Lorenz
" 4 Blagden & Prince
Belgium, 4 drs. D. C. Thomas & Sons

Antimony Ore—

France, 1 t. H. Johnson & Sons

Antimony Sulphide—

France, 6 cks. Petri Bros.

Asbestos—

Germany, 27 L Craven & Co.
Canada, 388 W. Byford

Barium Chloride—

Germany, 22 cks. Petri Bros.

Barytes—

Holland, 18 cks. Blundell, Spence & Co.

" 24 Pinchin, Johnson & Co.

Germany, 17 Thames S. T. & L. Co., Ltd.

Camphor—

Japan, 57 tubs Lewis & Peat

Caoutchouc—

France, 12 c. Blythe, Greene & Co.

Inhabane, 60 L. & I. D. Jt. Co.

Zanzibar, 350 D. Currie & Co.

Madagascar, 40 L. & I. D. Jt. Co.

Natal, 30 Clarke & Smith

Zanzibar, 3

Castor Oil—

Belgium, 55 bbls. J. T. Morton
E. Indies, 155 cks. Cayzer, Irvine
Belgium, 57 bbls. W. Mills

Caustic Potash

France, 20 drs. W. E. Cole
Belgium, 60 c. A. J. Luke & Co.

Chemicals (otherwise undesignated)

Germany, 60 L. & I. D. Jt. Co.
" 465 H. Lambert
Belgium, 20 John Cockerill Line
Holland, 10 J. Owen
Belgium, 231 T. Palmer
France, 201 Mery & Co.
Germany, 368 A. & M. Zimmermann
U. States, 650 F. Parker
Holland, 44 H. Lorenz
" 23 G. Boor & Co.
Germany, 402 T. H. Lee
Belgium, 310 A. H. Wintergill

Citrate of Lime

Italy, 23 cks. W. C. Bacon & Co.

Cream of Tartar—

Spain, 5 cks. F. C. Devan & Co.
France, 40 B. & F. W. Co.
Holland, 10 kgs. Kirkpatrick & Co.
Spain, 53 cks. B. & F. W. Co.
" 5 W. C. Bacon & Co.
France, 15 F. C. Devan & Co.
" 15 M. Ashby, Ltd.
Spain, 10 Fellows, Morton & Co.
Portugal, 5 B. & F. W. Co.

Dextrine—

Germany, 7 cks. City Coml. Wf.

Dyestuffs—

Belgium, 45 pks. 4 cks. W. Gerson & Co.

Argols

Italy, 27 cks. Thames S. T. & L. Co., Ltd.

Cape, 4 bgs. J. R. Thomson & Co.

Cochineal

Canaries, 22 bgs. Knowles & Foster

France, 21 cks. J. Harrison

" 25 Beresford & Co.

U. States, 32 pks. W. Burton & Sons

Denmark, 2 cks. M. D. Co.

France, 125 L. J. Levinstein & Sons

U. States, 10 Arkell & Douglas

Denmark, 10 cks. Sorenson & Co.

France, 80 cks. B. & F. W. Co.

" 20 cks. Bailey & Leatham, Ltd.

" 200 bxs. T. H. Lee

Indigo

E. Indies, 50 cts. J. Owen

Belgium, 10 John Cockerill Line

E. Indies, 10 F. Claydon & Co.

" 9 H. J. Perlach & Co.

" 10 L. & I. D. Jt. Co.

" 15 R. Von Glehn & Sons

Holland, 4 R. Baelz & Co.

Myrabolams

E. Indies, 1,594 pkts. A. B. Curtis & Co.

Shumac

Italy, 400 bgs. Bevington & Sons

" 3,131 J. Kitchen

" 25 A. Laming & Co.

" 25 T. S. Harris & Co.

Tanners' Bark

Durban, 53 t. A. & W. Nesbitt

Belgium, 40 F. A. Hughes

" 40 Sawyer, Sons & Co.

Natal, 78 Dyster, Nalder & Co.

" 39 Flack, Chandler & Co.

U. States, 20 H. Kohnstamm

Natal, 33 Gead, Rigg & Co.

Valonia

A. Turkey, 50 t. Boucher, Mortimore & Co.

Farina—

Holland, 50 bgs. J. Knill & Co.

Germany, 100 T. H. Lee

Glucose—

U. States, 1118 pks. 2720 c. L. Norman & Co.

" 600 600 J. Parsons

" 1050 1175 L. & I. D. Jt. Co.

" 90 517 R. G. Hall & Co.

France, 200 200 L. Norman & Co.

Germany, 25 203 M. D. Co.

U. States, 250 250 G. Clark & Son

" 999 999 Williams, Torrey & Co.

" 250 250 C. S. Lovell

" 50 300 Fellows, Morton & Co.

Glue—

France, 356 L J. Harrison

U. States, 52 Armour & Co.

Germany, 40 Philipps & Graves

Holland, 18 T. H. Lee

" 180 J. Earber & Co.

Belgium, 344 Mory & Co.

France, 16 Mess Parisiennes

" 56 Tegner, Price & Co.

Denmark, 12 J. Barber & Co.

Germany, 160 Anglo-American

Austria, 165 Oil Co.

U. States, 87 Carey & Sons

Holland, 13

Infusorial Earth—

Germany, 50 t. A. Haacke & Co.

Magnesium

Germany, 1 cks. D. W. Greenbough & Son

Manure—

Arg. Rep. 14 t. F. Kaye & Co.

Germany, 50 D. de Pass & Co.

E. Indies, 200 Fox, Roy & Co.

Germany, 18 A. J. Luke & Co.

Mica—

E. Indies, 2,193 L W. M. Smith & Son

Molasses—

U. States, 35 cks. 308 c. J. Fulford & Co.

" 10 280 W. G. Jacobs

" 600 1,020 R. G. Hall & Co.

Muriatic Acid—

Holland, 20 pks. J. Owen

Nickel Salts—

Germany, 5 cks. Petri Bros.

Ochre—

France, 100 bbls. 245 cks. W. Harrison & Co.

" 42 J. L. Lyon & Co.

Germany, 12 cks. Philipps & Graves

Holland, 4 pks. 21 Fleming's Oil & Chemical Co.

Italy, 4

Phosphate Rock—

Belgium, 260 t. Anglo-Contl. Guat o Works

Spain, 900 Lawes Chemical

Manure Co.

Pitch —	Holland, 10 cks.	Poth Hille & Co.
Plumbago —	Germany, 7 cks.	L. & I. D. Jt. Co.
	" 58	O. Scholzig
	" 25	B. Gallaway
Ceylon —	" 56	J. Thredder, Son, & Co.
Potash —	Germany, 21	T. H. Lee
	France, 100 c.	F. W. Berk & Co.
Potassium Bicarbonate —	Holland, 45 pks.	5 kgs. A. & M. Zimmermann
Potassium Carbonate —	Germany, 10 cks.	R. W. Greeff & Co.
	" 173 c.	J. M. Steel & Co.
	" 100	Petit Brs.
Potassium Chloride —	Germany, 508 bgs.	Bessler, Waechter, & Co.
Potassium Cyanide —	Holland, 100 cs.	F. Boehm
Potassium Prussiate —	Belgium, 9 cks.	Beresford & Co.
Pyrites —	Spain, 1,526 t.	Naylor, Benzon, & Co.
	Portugal, 988	Mason & Barry
Quicksilver —	Italy, 100 flsks.	H. Bath & Sons
Rosin —	France, 50 brls.	Perkins & Homer
	" 20	Lucas & Spencer's Wf.
	U. States, 100	Suer, Hartmann, & Co.
Saltpetre —	E. Indies, 494 bgs.	Perkins & Homer
	" 305	A. B. Curtis & Co.
	Germany, 21 cks.	80 kgs. P. Hecker & Co.
Soda —	Belgium, 2,300 c.	Sawer, Sons, & Co.
	Holland, 150	R. W. Greeff & Co.
	Germany, 180	Deering & Robottom
	Belgium, 1,000	J. W. Barker
	" 1,900	R. Waters
Sodium Acetate —	France, 54 cks.	J. Harrison
Sodium Hyposulphite —	Germany, 207 c.	City Coml. Wf.
Sodium Prussiate —	Belgium, 40 cks.	Blagden & Prince
Sodium Sulphate —	Germany, 100 bgs.	Deering & Robottom
Starch —	France, 60 cs.	L. & I. D. Jt. Co.
	Germany, 3,584	Horne & Co.
	" 6 cks.	10 bls. T. H. Lee
	U. States, 100 bgs.	H. Grey, junr.
	Holland, 1,340 cs.	Little & Johnston
	Belgium, 174	F. Claydon & Co.
	U. States, 100 bgs.	L. & I. D. Jt. Co.
	Germany, 140 cs.	Phillips & Graves
	Holland, 70	Becker & Wagner
	Belgium, 280	Leach & Co.
	" 40	T. M. Duché & Sons
	France, 100	C. Tennant, Sons, & Co.
	Belgium, 164	W. E. Cole
	" 450	E. & T. Pink
	Holland, 400	Carey & Sons
	" 80	Hertu, Peron, & Co.
	Holland, 40	T. H. Lee
	Germany, 203	J. Hall, junr., & Co.
Stearine —	France, 236 bgs.	H. Hill & Sons
	U. States, 772	Wilson & Furness
	" 50 cks.	Co.
	Holland, 3	H. Birdseye & Co.
	France, 230 bgs.	G. Boor & Co.
Sulphur —	Italy, 24 t.	J. Kitchin, Ltd.
	" 77	G. Boor & Co.
	" 5	W. F. Smith
	" 10	P. Hecker & Co.
	" 10	Soundy & Sons
	" 5	F. C. Devon & Co.
Tartaric Acid —	Germany, 4 pks.	B. & F. Wf. Co.
	Holland, 5	F. C. Devon & Co.
	" 10	H. Lorenz
	" 2	Kirkpatrick & Co.
	" 4	Domeier & Co.
Ultramarine —	Germany, 31 pks.	Steinhoff, Sens, & Co.
	Holland, 5 cs.	Hertu, Peron, & Co.
	Germany, 3	H. Brooks & Co.

Varnish —	Germany, 18 pks.	L. & I. D. Jt. Co.
	" 24	T. H. Lee
White Lead —	Belgium, 40 cks.	W. & A. Hampton
	" 48	T. & W. Farmiloe, Ltd.
	Holland, 8	A. & M. Zimmermann
	" 58	T. & W. Farmiloe, Ltd.
	" 20	W. Fletcher
	Germany, 65	D. Storer & Sons
	" 3	H. B. Alder & Co.
	" 27	Perkins & Homer
	" 10	H. Johnson & Sons
	Holland, 23	J. Barber & Co.
	Germany, 12	H. Lambert
	" 12	E. J. Diggins
	" 23	Pinchin, Johnson, & Co.
	France, 15	Hertu, Peron, & Co.
	Germany, 29	W. A. Rose & Co.
Wood Pulp —	Sweden, 5 pks.	M. D. Co.
	" 2,568	Tough & Henderson
	" 325	W. G. Taylor & Co.
	" 460	Henderson, Craig & Co.
	" 400	E. J. & W. Goldsmith
	Norway, 300	W. E. Bott & Co.
	" 1,320	Tough & Henderson
	Sweden, 162	London Paper Mills
	" 80	Hummel & Co.
	Sweden, 100	Perkins & Homer
	Belgium, 1,564	E. & J. W. Goldsmith
Zinc Oxide —	Germany, 50 cks.	J. D. Budd
	Holland, 20	G. Kahn & Co.
	" 50	Prprs Dowgate Dk.
	" 102	J. Matton
	" 40	M. Ashby, Ltd.
	U. States, 200	Randall Brs.
	Holland, 20	Soundy & Sons
	Germany, 500	J. Barber & Co.
	Holland, 4	Burrell & Co.
	" 50	

LIVERPOOL.

Week ending August 5th.

Acids —	Hamburg, 5 cs.	
Albumen —	Marseilles, 7 cs.	
Aluminium —	New York, 325 bxs.	
Asbestos —	Rotterdam, 26 bls.	
	Montreal, 203 bgs.	
Barytes —	Rotterdam, 18 cks.	50 bgs.
	Antwerp, 100 bgs.	48 cks.
Bleaching Powder —	Hamburg, 1 ck.	
Bone Ash —	Zarate, 409 bgs.	J. Nelson & Son, Ltd.
Bone Black —	Philadelphia, 20 bxs.	E. T. Houghton & Co.
Bone Meal —	Bombay, 3,200 bgs.	
Boracic Acid —	Leghorn, 5 cks.	
	Rotterdam, 16 cks.	
	Rouen, 11 cks.	
	Antwerp, 3 cks.	
Borate of Lime —	New York, 2,599 bgs.	
Borax —	Rouen, 3 cks.	
Caoutchouc —	Havre, 42 pks.	Cunard S. S. Co., Ltd.
Castor Oil —	Calcutta, 200 cs.	
	Marseilles, 33 brls.	J. Mack & Sons
	Marseilles, 838	46 cs.
Chemicals (otherwise unclassified)	Boston, 8 brls.	Waldheim, G. & Co.
	Dunkirk, 23 cks.	
Chloroform —	Antwerp, 1 cs.	
Colours —	Genoa, 3 cs.	Winger & Co.
	Bremen, 10	

Cream of Tartar —	Bordeaux, 32 cks.	
Dyestuffs —	Alizarine	
	Rotterdam, 1 brl.	
	Argois	
	Oporto, 32 cks.	German Bank
	Cochineal	
	Las Palmas, 15 bgs.	Canary Islands Trading Co.
	Marseilles, 2 bgs.	G. H. Fletcher & Co.
	Cutch	
	Singapore, 580 bxs.	
	Amsterdam, 2 cs.	
	Fustic	
	Corfu, 110 bdls.	
	Tampico, 1,062 sticks.	
	Logwood	
	Philadelphia, 73 bgs.	Gruning & Co.
	Myrabolams	
	Bombay, 2 686 bgs.	W. & R. Graham & Co.
	Bombay, 667 bgs.	
	Saffron	
	Valencia, 1 cs.	
	Seville, 1	
	Shumac	
	Palermo, 150 bgs.	
	Valonia	
	Patras, 1,564 bgs.	C. J. Papayanni & Co.
Farina —	Stettin, 50 bgs.	
Glucose —	New York, 525 brls.	50 bgs.
	Boston, 100	200
Glue —	Philadelphia, 10 brls.	Anglo-Am. Oil Co. Ltd.
	Rouen, 72 bls.	
	Rotterdam, 2 cks.	
	Fiume, 300 bgs.	
Lead Acetate —	Hamburg, 7 cks.	
Lime —	Rouen, 1 crt.	R. J. Francis & Co.
	Antwerp, 1 crt.	J. T. Fletcher & Co.
Limestone —	Antwerp, 1 crt.	J. T. Fletcher & Co.
Lithopone —	Rotterdam, 40 cks.	
Manganese —	Poli, 2,750 t.	
Manganese Ore —	Stratoni, 2,450 t.	Darwen & Mostyn Iron Co.
	" 6	10 c.
Mineral White —	Fiume, 750 bgs.	
	Bordeaux, 240	
Molasses —	Alexandria, 62 brls.	
Ochre —	Rouen, 5 cks.	R. J. Francis & Co.
	Cartagena, 30 brls.	
	Marseilles, 117	
	Alicante, 300 sks.	
Paint —	Boston, 1 ck.	1 kg. Pearson Brunnion
Paraffin Scale —	Rangoon, 790 bxs.	
	Philadelphia, 375 brls.	Anglo-Am. Oil Co. Ltd.
Phosphate Rock —	Bona, 1,700 t.	
	Pensacola, 11 bxs.	W. H. Stead & Co.
	" 121 t.	
Phosphoric Acid —	Bremen, 15 cks.	
Potash —	Antwerp, 4 cks.	
	Dunkirk, 9	20 dms.
	Rouen, 100 cks.	
Pyrites —	Huelva, 2,006 t.	Matheson & Co.
Rosin —	New York, 221 brls.	
Salt —	Hamburg, 500 bgs.	
	N. Orleans, 250 sks.	Morris Beef Co.
Saltpetre —	Calcutta, 1,737 bgs.	Ralli Brs.
	Hamburg, 20 kgs.	4 cks.

Scap —	Leghorn, 65 bxs.	
	New York, 481 brls.	
	Marseilles, 10 cs.	Globe Express Co.
	" 133 cs.	
	" 2 cs.	
	N. Orleans, 1,918 brls.	
	Norfolk, Va., 100	
Soda —	New York, 1 bx.	J. G. McCann
Starch —	Hamburg, 170 cs.	
	Antwerp, 180	J. T. Fletcher & Co.
	" 308	
Stearine —	Marseilles, 1 cs.	
	Antwerp, 25 bgs.	
Sulphur —	Catania, 7 cks.	450 bgs. 150 t.
Tallow —	Zarate, 219 pps.	J. Nelson & Son, Ltd.
	Philadelphia, 40 tcs.	
Tartaric Acid —	Marseilles, 10 brls.	3 cs.
Treacle —	Bordeaux, 1 cs.	
	Philadelphia, 600 brls.	
Ultramarine —	Rotterdam, 17 cks.	
Varnish —	New York, 7 brls.	
	Philadelphia, 47 bdls.	
Waste Salt —	Hamburg, 5 cks.	
White Lead —	Rotterdam, 57 cks.	J. T. Fletcher & Co.
	Antwerp, 27	
Wood Pulp —	Rotterdam, 125 bls.	
	Boston, 250 crts.	Lever Brs., Ltd.
Zinc Oxide —	Rotterdam, 20 cks.	
	Antwerp, 7	6 brls.
Zinc White —	Hamburg, 40 cks.	

MANCHESTER.

Week ending August 7th.

Acetanilide —	Rotterdam, 10 cs.	
Acetic Acid —	Rotterdam, 9 blns.	
Alizarine —	Rotterdam, 109 cks.	
Aluminous Cake —	Rotterdam, 27 cks.	
Ammonia —	Rotterdam, 13 cs.	
Antimony Oxalate —	Rotterdam, 10 cks.	
Antimony Salts —	Rotterdam, 10 cks.	
Barytes —	Antwerp, 75 bgs.	
Beta-Naphthol —	Rotterdam, 1 ck.	
Bone Ash —	Santa Elena, 580 t.	J. Gordon & Co.
Chemicals (otherwise undes.) —	Rouen, 22 cks.	
	Hamburg, 2 cs.	
Colours —	Antwerp, 8 cks.	
	Rotterdam, 84	23 cs.
	Boulogne, 11	1
	Ghent, 4 brls.	
Cream of Tartar —	Rotterdam, 22 cks.	
Farina —	Rotterdam, 300 bgs.	
	Hamburg, 550	
Glucose —	New York, 500 brls.	
Glue —	Hamburg, 47 bgs.	
	Rouen, 23 cks.	
	Antwerp, 2 cks.	
	Rotterdam, 230 bgs.	
	" 1 ck.	2 cs.
	Treport, 4	

Lead Acetate — Hamburg, 21 cks.	
Limestone — Antwerp, 1 crt. 1 cs.	
Ochre — Rotterdam, 16 cks.	
Paraffin Scale — New York, { 1,011 brls. 200 cs.	
Potash — Rotterdam, 10 cks. Rouen, 5	
Potassium Chloride — Hamburg, 30 cks	
Potassium Prussiate — Rotterdam, 2 brls.	
Potassium Sulphate — Rotterdam, 100 cks.	
Pumice Stone — Rotterdam, 18 cs.	
Pyrites — Huelva, 3,063 t.	
Soap — Rotterdam, 5 cs.	
Starch — New York, 4,212 bgs. Antwerp, 618 cs. Rotterdam, 83 Hamburg, 25 cks.	
Stearine — New York, 3 tcs.	
Tallow — New York, 150 tcs.	
Tartar — Hamburg, 20 kgs.	
Tartaric Acid — Rotterdam, 16 cks. 20 kgs.	
Ultramarine — Rotterdam, 2 cks.	
Waste Salt — Hamburg, { 36 cks. 160 brls. and qty. 2,102 bgs.	
Whiting — Gothenburg, 50 bgs.	
Wood Pulp — Gothenburg, 2,026 bls. Rotterdam, 800 pks.	
Zinc Ashes — Antwerp, 9 cks.	
Zinc Oxide — New York, 100 brls. Antwerp, 20 Hamburg, 10 cks.	
Zinc White — Rotterdam, 10 cks.	

HULL.

Week ending August 7th.

Acids — Hamburg, 27 cks. Wilson, Sons, & Co., Ld.	
Leghorn, 15 1 brl. "	
Boston, 20 "	
Hamburg, 1 cs. Bailey & Leatham, Ld.	
Albumen — Riga, 10 pks. Morley, Clarke, & Co.	
Alumina Sulphate — Rotterdam, 100 bgs. W. & C. L. Ringrose	
Antimony — Leghorn, 40 cks. Wilson, Sons, & Co., Ld.	
Asbestos — Genoa, 8 cs.	
Barytes — Antwerp, 30 cks. Bailey & Leatham, Ld. 88 Blundell, Spence, & Co. Bremen, 18 G. Holmes & Co. 22 Rotterdam, 64 Hutchinson & Son Antwerp, 33 Wilson, Sons, & Co., Ld. Bremen, 22 Todd & Son	
Castor Oil — New York, 120 brls. Wilson, Sons, & Co., Ld. Genoa, 56 cs. " Leghorn, 35 "	

Chemicals (otherwise undescribed) Amsterdam, 30 bks. Wilson, Sons, & Co., Ld. Dunkirk, 34 pks. " Antwerp, 20 dms. " Hamburg, 21 cks. " 16 cks. "	
Cod Oil — Hamburg, 20 brls. Wilson, Sons, & Co., Ld.	
Aalesund, 150 10 "	
Colours — Rotterdam, 7 cks. Wilson, Sons, & Co., Ld. Dunkirk, 17 4 cs. " Rotterdam, 3 Hutchinson & Son 48 pks. W. & C. L. Ringrose 20 brls. " Antwerp, 24 pks. Wilson, Sons, & Co., Ld.	
Cottonseed Oil — New York, 250 brls. Wilson, Sons, & Co., Ld.	
Cream of Tartar — Rotterdam, 2 cks. Hutchinson & Son	
Dyestuffs — Alizarine Rotterdam, 10 pks. W. & C. L. Ringrose Argols Bordeaux, 42 cks. Wilson, Sons, & Co., Ld. Myrabolams Bombay, 1,490 bgs. Shumac Palermo, 200 bgs. Wilson, Sons, & Co., Ld. Valonia Smyrna, 310 t. Farina — Stettin, 100 bgs. Wilson, Sons, & Co., Ld. Hamburg, 125 " Glucose — New York, 25 brls. Wilson, Sons, & Co., Ld. 350 1,000 bgs. Christiansund, 1 brl. Wilson, Sons, & Co., Ld. Bergen, 2 " Dunkirk, 12 cks. " Hamburg, 10 bgs. " Kaolin — Amsterdam, 20 cks. Reckitt & Sons Lead Acetate — Hamburg, 4 cks. Bailey & Leatham, Ld. Limestone — Antwerp, 4 crts. Wilson, Sons, & Co., Ld. Lithopone — Amsterdam, 40 cks. W. & C. L. Ringrose Phosphate — Antwerp, 40 pks. Wilson, Sons, & Co., Ld. Ghent, 160 t. " Phosphorus — New York, 10 cs. Pitch — Rotterdam, 170 cks. Hutchinson & Son 6 W. & C. L. Ringrose Archangel, 420 Antwerp, 24 Wilson, Sons, & Co., Ld. Pumice Stone — Leghorn, 70 pks. Wilson, Sons, & Co., Ld. Messina, 55 cs. " Leghorn, 10 brls. " Rosin — Hamburg, 25 brls. Wilson, Sons, & Co., Ld. Soap — Riga, 20 cs. Wilson, Sons, & Co., Ld. Marseilles, 22 " 10 " Rotterdam, 10 Hutchinson & Son Soda — Antwerp, 100 pks. Starch — Ghent, 56 cs. Hutchinson & Son Antwerp, 80 Newhouse & Co. Wilson, Sons, & Co., Ld. Ghent, 198 "	

Bremen, 1,561 Rotterdam, 271 Tallow — New York, 160 brls. Wilson, Sons, & Co., Ld. Dunkirk, 128 cks. " Tar — Archangel, 1,766 brls. Tar Oil — Archangel, 135 cks. Tartar — Naples, 22 cks. Wilson, Sons, & Co., Ld. Bordeaux, 10 Rawson & Robinson Tartaric Acid — Rotterdam, 3 cks. Hutchinson & Son Treacle — New York, 900 brls. Wilson, Sons, & Co., Ld. Boston, 125 " Ultramarine — Bremen, cks. J. Pyefinch & Co. Hutchinson & Son Rotterdam, 22 6 cs. " Varnish — Antwerp, 5 brls. Wilson, Sons, & Co., Ld. White Lead — Amsterdam, 111 cks. Hutchinson & Son Rotterdam, 53 4 cs. " Antwerp, 13 Bailey & Leatham, Ld. Rotterdam, 19 W. & C. L. Ringrose Amsterdam, 15 " Wood Pulp — Ghent, 4 cs. Hutchinson & Son Christiania, 660 bls. Wilson, Sons, & Co., Ld. Hamburg, 65 cs. " Gothenburg, 800 bls. " Drontheim, 214 " Helsingfors, 1,120 " Hamburg, 413 J. Good & Sons 80 pks. Bailey & Leatham, Ld. Zinc Oxide — Antwerp, 25 cks. Sissons Bros. & Co. 50 brls. Bailey & Leatham, Ld. Zinc Sulphate — Hamburg, 50 cks. Wilson, Sons, & Co., Ld. Gothenburg, 20 Sissons Bros. & Co. 20 bgs. Wilson, Sons, & Co., Ld. Zinc White — Amsterdam, 1 ck. Hutchinson & Son	
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GLASGOW.

Week ending August 12th.

Arachide Oil — Rotterdam, 12 cks. J. Rankine & Son	
Barium Sulphate — Antwerp, 150 bgs	
Barytes — Hamburg, 650 bgs. Rotterdam, 117 cks. J. Rankine & Son	
Castor Oil — Marseilles, 194 brls. 24 cs. Antwerp, 84 cks.	
Chemicals (otherwise undescribed) Hamburg, 6 cs. Rotterdam, 37 cks. J. Rankine & Son	
Colours — Antwerp, 4 cks. Rotterdam, 10 J. Rankine & Son Hamburg, 4 bxs. 19 pks. " 2 1 cs. " Cream of Tartar — Tarragona, 5 cks. Dextrine — Hamburg, 50 bgs. Dyestuffs — Alizarine Rotterdam, 14 bls. J. Rankine & Son Aniline Rotterdam, 1 cs. J. Rankine & Son Aniline Colours Hamburg, 2 cks. 1 cs.	

Extracts Antwerp, 1 ck.	
Madder Marseilles, 6 cks.	
Myrabolams Bombay, 640 bgs.	
Valonia Smyrna, 500 t. Martin & Millar 125 Wm. Buntin	
Glucose — New York, 212 cs.	
Glue — Hamburg, 120 bgs.	
Lamp Black — New York, 50 brls.	
Lead Carbonate — Rotterdam, 14 cks. J. Rankine & Son	
Manganese Chloride — Rotterdam, 6 cks. J. Rankine & Son	
Molasses — Montreal, 1 brl.	
Ochre — Marseilles, { 161 cks. 41 brls.	
Phosphate of Lime and Rock — Ghent, 1,010 bgs.	
Potash — Rotterdam, 20 cks. J. Rankine & Son	
Potassium Permanganate — Rotterdam, 6 cks. J. Rankine & Son	
Potassium Nitrate — Hamburg, 56 cks.	
Potassium Prussiate — Rotterdam, 2 cks. J. Rankine & Son	
Pyrites — Huelva, 3,806 t. Tharsis Co.	
Rosin — New York, 1,934 brls.	
Soap — New York, 14 bxs. Philadelphia, 650 26 crts.	
Starch — New York, 500 bgs. Rotterdam, 15 cs. J. Rankine & Son Antwerp, 100	
Stearine — Rotterdam, 16 cks. J. Rankine & Son 60 brls.	
Tallow — New York, 25 tcs. Philadelphia, 150 brls.	
Tartaric Acid — Marseilles, 4 brls.	
Treacle — Philadelphia, 500 brls.	
Waste Salt — Hamburg, { 142 t. 498 cks.	
White Lead — Rotterdam, 78 pks. J. Rankine & Son	
Wood Pulp — Gothenburg, 42 bls. Hamburg, 78 Christiania, 398 10 cs. Drontheim, 1,040	
Zinc White — Rotterdam, 10 cks. J. Rankine & Son	

TYNE.

Week ending August 7th.

Antimony Ore — Antwerp, 4,242 bgs. Tyne S. S. Co.	
Barium Chlorate — Rotterdam, 350 bgs. Tyne S. S. Co.	
Barytes — Antwerp, 100 bgs. Tyne S. S. Co.	
Castor Oil — Antwerp, 27 brls. Tyne S. S. Co.	
Colours — Rotterdam, 1 cs. Tyne S. S. Co. Ghent, 4 brls. " Antwerp, 1 ck. "	
Glue — Hamburg, 20 bgs. Tyne S. S. Co. Antwerp, 1 ck. "	
Limestone — Antwerp, 4 cs. Tyne S. S. Co.	

Phosphate— Antwerp, 340 t. Langdale's Chemical M. Co.	GOOLE. Week ending August 4th.	Potash— Hamburg, 3 cks. 4 dms. Calais, 1 12 Dunkirk, 1 12	Rotterdam, 2
Pitch— Rotterdam, 6 cks. Tyne S. S. Co.	Alizarine— Rotterdam, 92 cks. 1 cs.	Pyrites— Huelva, 1,370 t.	Chemicals (otherwise undescribed) Rotterdam, 10 cks. 20 bgs. Hamburg, 3 cs. Antwerp, 1
Soap— Rotterdam, 4 cs. Tyne S. S. Co.	Antimony— Boulogne, 1 ck.	Saltpetre— Hamburg, 40 cks.	Colours— Hamburg, 28 cks. 2 cs. 9 pks. Antwerp, 2 51 Rotterdam, 4
Starch— Rotterdam, 68 cs. Tyne S. S. Co.	Caoutchouc— Boulogne, 3 cks.	Starch— Rotterdam, 10 cs. Antwerp, 104	Dyestuffs (otherwise undescribed) Antwerp, 11 cks. 4 cs. 19 pks. Hamburg, 7 1 10
Stearine— Rotterdam, 14 bgs. Tyne S. S. Co. Antwerp, 7 "	Colours— Hamburg, 17 cks. 6 cs.	Tartar— Rotterdam, 3 cks.	Indigo— Rotterdam, 38 ehts.
Wood Pulp— Gothenburg, 200 pks. Christiania, 250 bks. 55 cs.	Dyestuffs (otherwise undescribed) Rotterdam, 434 cks. 78 cs. Boulogne, 3 1 170 pks. Amsterdam, 6	GRIMSBY. Week ending August 7th.	Soap— Hamburg, 1 pk.
Zinc Oxide— Antwerp, 25 brls. Tyne S. S. Co.	Indigo— Rotterdam, 15 chts.	Caoutchouc— Hamburg, 3 cs.	Starch— Rotterdam, 40 cks.
Zinc Sulphate— Gothenburg, 70 bgs.	Logwood— Belize, 426 t.		Zinc Ashes— Antwerp, 4 cks.
Zinc White— Rotterdam, 40 cks. Tyne S. S. Co.			

EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON. Week ending August 11th.			
Acids— Cape Town, 16 cs. £12	Dunedin, 20 dms. 1 5 61	Leghorn, 14 c. 13	Tartaric Acid— Sydney, 16 c. £83
Alkali— Sydney, 1 t. 4 c. £16	Christchurch, 1 1 28	Cape Town, 1 10 17	Rio de Janeiro, 10 56
Lyttelton, 5 28	Piraeus, 10 pks. 18	Aden, 1 2 17	Boulogne, 5 30
Napier, 5 36	Fremantle, 2 10	Fremantle, 7 c. £33	Yokohama, 1 t. 1 121
Alum Waste— Calcutta, 35 t. 19 c. £88	Melbourne, 3 17	Sydney, 1 t. 5 98	Wellington, 1 1 14
Ammonia— Cape Town, 10 cs. £13	Colombo, 8 31	Invercargill, 1 82	
Ammonia (Liquid)— B. Ayres, 9 c. £28	Rio de Janeiro, 2 21	Disinfectants— Calcutta, 4 cs. £12	
Ammonium Carbonate— Yenesei River, 3 t. 18 c. £90	Montreal, 1 t. 12 c. 235	Aden, 120 dms. 75	
New York, 35 kgs. 55	Boulogne, 2 cs. 13	Delagoa Bay, 40 kgs. 75	
Dunkirk, 1 t. 8 c. 40	Citric Acid— Durban, 3 £18	Shanghai, 28 cks. 41	
Ammonium Chloride— Varna, 2 t. 1 c. £73	Copenhagen, 10 62	Guanco— Dunkirk, 135 t. £605	
Bourgas, 1 16 52	Brisbane, 1 kg. 7	Manure— Landerneau, 305 t. £3,050	
Samsoun, 1 31	Brussels, 15 9	Treport, 9 16 c. 63	
Constantinople, 18 3 brls. 51	Melbourne, 10 68	Gothenburg, 39 8 85	
Yenesei River, 18 cks. 140	Rotterdam, 1 7	Stockholm, 10 9 21	
Sydney, 1 t. 3 33	Libau, 6 38	Libau, 200 2 450	
Ammonium Sulphate— Sourabaya, 1,000 t. £8,000	Coal Products— Boston, 95 cks. £1,120	Dunedin, 25 13 82	
Samarang, 150 1,200	Aniline, 1 cs. £38	Durban, 110 456	
Antwerp, 152 1,205	Aniline Dyes Sydney, 1 cs. £8	Potash— M. Video, 11 c. £11	
Hamburg, 177 1,375	Aniline Oil New York, 16 dms. £570	Potassium Bichromate— Stettin, 6 t. £30	
Rouen, 159 945	Aniline Salts New York, 32 cks. £230	Piraeus, 1 4 c. 55	
Arsenic— Yokohama, 85 kgs. £97	Anthracene Cologne, 104 cks. £1,072	Sydney, 1 t. £36	
Napier, 400 dms. £480	Amsterdam, 272 773	Piraeus, 10 c. 70	
Bleaching Powder— Pt. Elizabeth, 1 t. £11	Dusseldorf, 260 1,165	Potassium Cyanide— Melbourne, 5 c. £22	
Gibraltar, 3 11 c. 35	Benzol Rotterdam, 150 cks. 74 brls. £849	Pt. Elizabeth, 10 t. 770	
Borax— Sydney, 40 kgs. £72	Creosote Dieppe, 23,500 galls. £123	Potassium Permanganate— Calcutta, 3 cs. £11	
Durban, 3 cs. 10	Lisbon, 69,308 370	Potassium Prussiate— Genoa, 2 cks. £25	
E. London, 5 29	B. Ayres, 25 brls. 20	Hiogo, 1 t. 5 c. 58	
Calcium Chloride— Hamburg, 14 t. 14 c. £40	Creosote Oil N. Orleans, 693 cks. £390	Salicylic Acid— Melbourne, 2 c. £21	
Calcium Phosphate— Melbourne, 3 cs. £23	Naphtha Treport, 30 brls. £190	Saltpetre— Sydney, 1 t. 2 c. £21	
Carbolic Acid— Madras, 25 dms. £19	Naphthaline Constantinople, 5 cks. £9	Oporto, 14 13 506	
Marseilles, 120 t. 225	Hamburg, 6 809 bgs. 270	Wellington, 1 t. 7 c. £73	
Baltimore, 60 cks. 275	Pitch Newport News, 250 cks. £216	Pt. Elizabeth, 13 8 563	
Antwerp, 28 65	N. Orleans, 200 brls. 26	Lyttelton, 450 cs. 675	
Amsterdam, 48 218	Halifax, 73 cks. 21	Cape Town, 30 t. 13 611	
Carbonic Acid Gas— Cape Town, 45 tubes £150	Philadelphia, 250 56	Durban, 210 dms. 70	
Caustic Soda— E. London, 12 c. £12	Colombo, 25 brls. 17	B. Ayres, 33 2 923 cs. 2,870	
Pt. Elizabeth, 6 t. 18 136	Antwerp, 820 t. 925	Soda— Boulogne, 2 c. £67	
Seychelles, 10 15 79	Hochfeld, 225 260	Pt. Elizabeth, 3 t. 3 0	
Normanton, 2 2 10	Delagoa Bay, 10 dms. 3	Cape Town, 5 14 19	
Cape Town, 5 6	Antwerp, 1,220 t. 1,419	Melbourne, 1 14	
Chemicals (otherwise undescribed) Mackay, 14 pks. £46	Pyridine Hamburg, 7 cks. £72	Soda Ash— Lyttelton, 5 t. 3 c. £27	
Brussels, 48 kgs. 300	Tar N. Orleans, 140 brls. £65	Soda Crystals— Delagoa Bay, 1 t. 13 c. £5	
Amoy, 2 cs. 12	Santos, 200 100	Sodium B carbonate— Townsville, 1 t. 4 c. £9	
Hamburg, 31 pks. 225	Malmö, 1 ck. 5	Toronto, 1 0	
Brisbane, 9 12	Delagoa Bay, 40 kgs. 25 dms. 11	Sodium Carb. nate— E. London, 2 c. £9	
Cape Town, 3 29	New York, 50 cks. 238	Sulphuric Acid— Cape Town, 30 crbys. 40 cs. £44	
Calcutta, 38 24	Cologne, 200 92	Superphosphates— Christchurch, 100 t. £261	
Gothenburg, 15 cks. 11	Delagoa Bay, 50 6		
Gibraltar, 16 13	Copper Sulphate— Treport, 20 t. £310		
	Libau, 1 16		
	Paris, 15 236		
	Antwerp, 30 460		
	Rouen, 10 155		
	Bourgas, 7 123		
	Danzig, 10 160		
	Dunkirk, 5 78		

LIVERPOOL.

Week ending August 11th.

Alum— M. Video, 20 t. 3 c. £57	
Cape Town, 10 2 q. 4	
Porto Alegre, 3 5 2 15	
Madras, 9 1 47	
Ammonia— Valparaiso, 8 c. £21	
Ammonium Carbonate— Santander, 1 t. £25	
Norroping, 1 2 c. 28	
Trieste, 1 8 50	
Toronto, 10 2 q. 13	
Ammonium Chloride— Santander, 16 c. £25	
Madras, 1 t. 33	
Stettin, 1 4 40	
Galatz, 12 20	
Patras, 4 6	
Copenhagen, 1 19	
Philadelphia, 8 4 2 q. 255	
Iquique, 3 6	
Alexandria, 1 31	
Amsterdam, 5 7	
Hamburg, 4 9	
Constantinople, 1 12 40	
Smyrna, 2 62	
Ammonium Sulphate— Teneriffe, 10 t. £93	
Palermo, 10 5 c. 76	
Genoa, 10 2 81	
Philadelphia, 25 12 205	
Gd. Canary, 6 12 54	
Las Palmas, 42 5 310	
Bleaching Powder— Baltimore, 110 cks.	
Boston, 118 60 cs. 158 pks. 6 brls.	
Calcutta, 60 cs.	
Bordeaux, 6	
Fairwater, 6	
Genoa, 12	
Ghent, 73	
Leghorn, 30	
Lisbon, 105	
Montreal, 29	
New York, 196 25 brls.	
Oporto, 50	
Philadelphia, 120	
Piree, 14	
St. John, 5	
Syria, 3	
Boric Acid— Copenhagen, 10 c. £14	
Montreal, 1 t. 10 40	
Yokohama, 2 10 73	
La Guayra, 1 kg. 7	
Borax— Antwerp, 4 t. 15 c. £90	
Stettin, 13 10 246	
Bremen, 11 11	

Copenhagen, 2 2 30	Cobalt—	Potassium Bichromate—	Copenhagen, 100 188
Montreal, 1 6 68	Nagasaki, 4 c. £117	Pireus, 1 t. 19 c. £82	Corfu, 30 brls.
Hamburg, 13 17 192	Cobalt Oxide — 1 c. £30	Copenhagen, 5 15 225	Fairwater, 920
Ancona, 2 10 7	Valencia, 1 c. £30	Potassium Chlorate—	Genoa, 200
Barcelona, 2 14 53	Copper Sulphate—	Bari, 15 t. £28	Ghent, 498 16
Rotterdam, 21 6 2 q. 363	Ancona, 10 t. 3 c. £116	Naples, 1 36	Gothenburg, 390 kgs. 61
Calcium Chloride—	Galatz, 4 18 90	Rio, 1 36	Hio, 480 68
Leghorn, 6 t. 2 c. £14	Copenhagen, 6 10 94	Copenhagen, 10 336	Melbourne, 25 brls.
Genoa, 2 1 6	Bordeaux, 10 160	Bahia, 5 150	M. Video, 1,407
Carbolic Acid—	Sydney, 1 5 19	Hio, 1 30	Philadelphia, 100 tcs.
Odessa, 6 c. £26	Madras, 1 5 19	Sydney, 1 30	Piræus, 100 brls.
New York, 1 t. 17 31	Vera Cruz, 60 3 886	Newcastle, 10 318	Pt. Natal, 3,446
Yokohama, 3 159	Bombay, 5 5 22	New York, 17 16 60	Sydney, 50
Hamburg, 9 9 678	Kurrachee, 3 11 55	Gothenburg, 2 15 150	Talcahuano, 50
Hong Kong, 6 9	Amsterdam, 3 1 139	Vera Cruz, 1 15 338	Valparaiso, 100
Baltimore, 1 26	Antwerp, 9 1 3 q. 171	Hamburg, 10 48	Yokohama, 425
Caustic Potash—	Constantinople, 2 10 41	Potassium Cyanide—	Soda Crystals—
Sydney, 2 t. £56	Kingston, 1 5 20	Delagoa Bay, 7 t. 1 c. £510	Alexandretta, 100 brls.
Caustic Soda—	Syria, 2 5 33	B. Ayres, 2 3 q. 1	Bahia, 33 bgs. 13 cks
Adelaide, 4 dms.	Alexandretta, 2 5 5	Potassium Nitrate—	Calcutta, 100 kgs. 35
Alicante, 40	M. Video, 2 18 3 45	Gd. Canary, 2 t. £29	Gibraltar, 50
Ancona, 25	Rouen, 20 3 235	Potassium Prussiate—	Malta, 10
Antofagasta, 25	Danzig, 11 3 171	Genoa, 7 t. 9 c. £387	Messina, 10
Antwerp, 15	Copperas—	Salt—	Montreal, { 100 30
Bahia, 108	M. Video, 5 t. £10	Ambrizette, 19 t. 15 c.	New York, { 350 200
Baltimore, 200	Cream of Tartar—	Antwerp, 71 16 6,650 sks.	Valparaiso, 200
Barcelona, 425	Vera Cruz, 1 c. £6	Calcutta, 1,280	Sodium Bicarbonate—
Bilbao, 30	Disinfectants—	Cameroon, 2,000 bgs.	Adelaide, 150 kgs.
Calcutta, 20	Bombay, 1 t. 19 c. £74	Delagoa Bay, 5 t.	Alexandretta, 50 brls.
Catania, 23	Iodine—	Demerara, 1,163 brls.	Alexandria, 30
Dunedin, 30	Rotterdam, 40 brls. £3,630	E. London, 100 bgs.	Amsterdam, { 20 30
E. London, 24	Iron Oxide—	Hio, 190 t. 6	Antwerp, { 10 bgs. 4 cks
Fairwater, 10	Pt. Natal, 9 t. 19 c. 2 q. £29	Iceland, 10	Batavia, 34 dms.
Galatz, 34	Magnesia—	Kingston, 300	Bordeaux, 42
Gefle, 257	Valparaiso, 84 lbs. £85	Lagos, 2,189 bgs.	Boston, 400
Genoa, 8	New York, 1 c. £21	Matadi, 325 t. 2,800	Cartagena, 25
Hamburg, 57	Magnesium Chloride—	Montreal, 2,800	Constantinople, 20 10 brls.
Havana, 69	Genoa, 7 t. 10 c. £19	Newcastle, 2,000	Dunedin, 140
Hio, 404	Calcutta, 12 £12	Noqui, 40	Galatz, 20
Libau, 98	Magnesium Sulphate—	Old Calabar, 20	Genoa, 46
Lisbon, 40	Lisbon, 10 cks.	Pt. Natal, 180	Hamburg, 120
Malta, 13	Manure—	Rangoon, 1,081	Hio, 1,260
Manila, 35	Gd. Canary, 6 t. 10 c. £22	San Francisco, 50	Hong Kong, 14
Messina, 50	Bordeaux, 12 8 40	Valparaiso, 4	Madras, 50
Naples, 80	Nitric Acid—	Wiborg, 1,234 200 cs.	Melbourne, { 400 50 bgs.
N. Orleans, 11 bxs.	Antofagasta, 7 c. 1 q. £20	Salt Cake—	Messina, 20
New York, 50	Paint—	Antwerp, 60 t. £63	Montreal, { 50 20
Oporto, 45	Alexandria, 72 kgs.	Bahia, 2 t. 11 c. £12	New York, { 100 kgs. 5 cs. 20
Para, 20	Antwerp, 12 dms.	Maceio, 2 t. 9 52	Pt. Natal, 40
Pernambuco, 60	Bahia, 9 111 cs.	Valparaiso, 7 10 156	Rangoon, 85
Rangoon, 30	Beyrout, 9 13 13	Satinite—	Rockhampton, 200
Rio Grande, 44	Bombay, 1,138 142 13	Copenhagen, 18 t. 6 c. 1 q. £70	Rotterdam, 70
Rio Grande Do Sul, 60	Boston, 11 4 2 cks.	Soap—	Santander, 25 brls.
Rotterdam, 61	Bremen, 11 4 2 cks.	Accra, 320 dms. 3 cs.	Seville, 180 pks.
Samarang, 15	B. Ayres, 20 110	Alexandria, 180 bxs.	Smyrna, { 10 bgs. 190 kgs.
Seville, 90	Cape Town, 20 1	Arocas, 60 pks.	Sydney, 250
Smyrna, 20	Colon, 20 22	Bahia, 312 bxs.	Valencia, 50
Stettin, 38	Guayaquil, 2 3	Bombay, 100 bdls. 52	Valparaiso, 180
Sydney, 30	Halifax, 14 25 57 pks	Callao, 30 81	Vigo, 20
Toronto, 50	Havre, 25 57 pks	Cameroon, 157	Sodium Bichromate—
Trieste, 15	Loanda, 41	Canaria, 1,070	Syria, 2 cks.
Valencia, 10	Matadi, 50 18 12 cks	C. C. Castle, 500	Sodium Chlorate—
Valparaiso, 150	New York, 288 15	Cape Town, 520	Antwerp, 5 kgs.
Chemicals (otherwise unles.)—	Philadelphia, 10 cans 2	Chefoo, 1	Sodium Silicate—
Piræus, 5 c. £7	Principe, 112 pks.	Constantinople, 85	New York, 10 brls.
Bombay, 3 t. 15 111	Seville, 1 1	Delagoa Bay, 570 1,170	Sodium Sulphate—
Antwerp, 1 6 18	Sydney, 320 kgs. 165	E. London, 397 434	Copenhagen, 26 bgs.
Bordeaux, 1 6 18	Valdivia, 10 165	Gibraltar, 20	Starch—
New York, 7 19 990	Valparaiso, 6 10	Hamburg, 500 11	Antwerp, 20 bgs.
Bremen, 6 9	Savanilla, 20 2	Karachi, 22	Copenhagen, 5 cks.
Montreal, 14 3 69	Painters Colours—	La Guayra, 380	Strontia—
Odessa, 5 130	Bahia, 282 kgs. 2 cs.	Las Palmas, 50	Hamburg, 175 t. 3 c. £1,225
Venice, 1 28	Bombay, 310 1	Loango, 50	Sulphur—
Hamburg, 10 13	Karachi, 10 10 pks. 4 cks.	Mandiji, 50	Bahia, 1 t. £9
Philadelphia, 13 7 405	Las Palmas, 10 10 pks. 4 cks.	N. Orleans, 2	Halifax, 25 1 c. 106
China Clay—	Manaos, 10 10 pks. 4 cks.	Pt. Natal, 3 528	St. John's, 1 4
Bombay, { 120 cks. 3 pks.	Paraffin Wax—	Rangoon, 47	Toronto, 3 15 5
Boston, 20 dms. 40 brls.	Antwerp, 5 cs. 167	Rio Del Rey, 112	Savanilla, 2 2 q. 24
Montreal, 70	Bari, 20 bgs.	Rotterdam, 500	Sulphuric Acid—
Philadelphia, 250	Phosphate—	St. John's, 20	Gd. Canary, 18 c. £10
Rio de Janeiro, 40	Bari, 10 t. £15	Shanghai, 9,930	Maranham, 1 t. 2 12
Chromium Oxide—	Phosphorus—	Singapore, 2,600	Superphosphates—
Valencia, 1 c. £9	B. Ayres, 11 c. £110	Smyrna, 62	Rostock, 40 t. £1,760
Citric Acid—	Hio, 3 t. 15 815	Teneriffe, 255	Riga, 62 10 c. 2,096
Bombay, 2 c. £6	Shanghai, 1 200	Warri, 150	Konigsberg, 640 7 1,430
Coal Products—	Trinidad, 3 30	Soda Ash—	Tartaric Acid—
Aniline Oil	Vera Cruz, 2 22	Antwerp, 400 bgs.	Rangoon, 1 cs. £5
Tampico, 1 dms.	Potashes—	Baltimore, 1,000 36 cks.	Varnish—
Boston, 5	Konigsberg, 6 c. £6	Barcelona, 20	B. Ayres, 7 cs.
Aniline Salts		Bombay, 40 kgs.	Colon, 4
Barcelona, 4 cks.		Boston, 143 13 tcs. 87	Constantinople, 1
Boston, 23			Genoa, 15
Lisbon, 2 pks.			Guayaquil, 1
New York, 21			
Tar			
Hamburg, 149 brls.			
Old Calabar, 12			
Philadelphia, 600			
Coal Products (otherwise unles.)—			
New York, 14 pks.			

Montreal,	1 dm.	
Valparaiso,	5	
White Lead—		
Calcutta,	200 kgs.	
Zinc Chloride—		
Calcutta,	2 c.	£10
Genoa,	1 t.	12

MANCHESTER.

Week ending August 11th.

Albumen—		
Rouen,	3 cks.	
Ammonium Chloride—		
Treport,	30 dms.	
Ammonium Sulphate—		
Rouen,	1,550 bgs.	
Aniline Colours—		
Hamburg,	1 ck. 2 cs. 5 kgs.	
Rotterdam,	1	1 brl.
Aniline Oil—		
Hamburg,	12 cks.	5 dms.
Antwerp,	12 cks.	5 dms.
Aniline Salts—		
Hamburg,	20 cks.	
Antimony—		
Bombay,	2 cks.	
Carbolic Acid—		
Rouen,	100 btl.	5 brls.
Rotterdam,		
Caustic Soda—		
Rio de Janeiro,	10 dms.	
Chemicals (otherwise unscr.)		
Rotterdam,	5 cks.	20 kgs.
Glue—		
Rotterdam,	10 cks.	
Mineral White—		
Rio de Janeiro,	20 bgs.	
Naphtha—		
Treport,	51 cks.	50 brls.
Naphthaline—		
Antwerp,	14 cks.	
Naphthionate—		
Rotterdam,	65 cks.	
Naphthol—		
Treport,	10 cks.	
Hamburg,	9	
Naphthylamine—		
Hamburg,	21 cks.	
Pitch—		
Antwerp,	152 t.	
Shumac Extract—		
Christiania,	25 cks.	
Sodium Bicarbonate—		
Treport,	54 kgs.	
Beyrouth,	100	
Tripoli,	20	
Tallow—		
Rotterdam,	11 cks.	
Toluol—		
Rotterdam,		21 dms.

HULL.

Week ending August 7th.

Ammonium Sulphate—		
Antwerp,	200 bgs.	
Dunkirk,	54	
Ghent,	403	
Benzol—		
Antwerp,	24 cks.	
Caustic Soda—		
New York,	173 dms.	
Chemicals (otherwise unscr.)		
Antwerp,	43 cks.	
Bergen,	1	
Bremen,	3	
Christiania,	546 lbs.	17 pks.
Gothenburg,	3	14 cs.
Hamburg,	7	122
Konigsberg,	6	13
New York,	45	
Rouen,	20	
Rotterdam,	40	
Cottonseed Oil—		
Antwerp,	105 c.	
Amsterdam,	301	
Bremen,	120	
Copenhagen,	210	
Gothenburg,	152	
Hamburg,	623	
Harlingen,	100	
Rouen,	3	
Rotterdam,	303	

Dyestuffs (otherwise unscr.)		
Ghent,	1 cs.	
Glue—		
Gothenburg,	20 bgs.	
Hamburg,	5	
New York,	20 cks.	
Guano—		
Dunkirk,	150 sks.	
Linseed Oil—		
Amsterdam,	100 c.	
Christiania,	365	
Copenhagen,	89	
Christiansand,	36	
Christiansund,	71	
Drontheim,	18	
Stockholm,	7	
Paint—		
Drontheim,	2 cks.	
Painters' Colours—		
Antwerp,	1 pk.	
Christiania,	23 cks.	64 dms.
Copenhagen,	16	8 cs. 1
Drontheim,	10	
Ghent,	12	1 2 pks.
Gothenburg,	21	
Hamburg,	4	2
New York,	247	35
Rotterdam,	5	5 dms.
Stockholm,	5	1
Phosphate—		
Gothenburg,	96 t.	
Harburg,	550	
Pitch—		
Antwerp,	66 t.	
Dunkirk,	50	
Soap—		
Drontheim,	300 cs.	
Starch—		
Copenhagen,	60 cs.	
Tallow—		
Christiania,	4 cks.	
Dunkirk,	59	
Stockholm,	9	
Tar—		
Antwerp,	8 cks.	
Copenhagen,	20	
Harlingen,	1	
Varnish—		
Antwerp,	6 cs.	
Copenhagen,	1	4 cans
Hamburg,	5 cks.	
Rotterdam,	4	
Stockholm,	1	

GLASGOW.

Week ending August 12th.

Albumen—		
U.S.A.,		£140
Alkali—		
Rosario,	14 t. 14½ c.	
Ammonium Sulphate—		
Italy,	60 t. 14½ c.	
Sicily,	5	2
U.S.A.,	61	½
Asbestos—		
Singapore,		£37
Bleaching Powder—		
Melbourne,	6 t. 2½ c.	
Borax—		
Montreal,		£20
Caustic Soda—		
B. Ayres,	7 t. 5½ c.	
Coal Products		
Benzine		£28
France,		
Creosote Oil		£1,597. 108.
France,		
Pitch		
Bombay,		£50
Canada,		171
Kurrachee,		87
Gothenburg,		150
Italy,		35
U.S.A.,		43
Hamburg,	57 t. 17 c.	
Tar		
Kurrachee,		£23
Newfoundland,		112
U.S.A.,		92
Hamburg,	1,876 brls.	
Coal Products (otherwise unscr.)		
Amsterdam,		£100
Christiania,		87
Rotterdam,		160
Copperas—		
Bombay,		£97
Dextrine—		
New York,	21 t. 13½ c.	

Extracts—		
Canada,	£408. 168.	
Victoria,	£61	
Indigo—		
Queensland,	£31	
Iodine—		
Rotterdam,	£1,160	
Lead Nitrate		
Montreal,	£37	
Linseed Oil—		
Townsville,	3 t. ¾ c.	
Logwood—		
Canada,	£44	
Magnesium Sulphate—		
Christiania,	£31	
Nitric and Sulphuric Acid—		
Bombay,	£1,950	
Paint—		
Bombay,	£136	
B. Ayres,	119	
Brisbane,	25	
Iquique,	60	
Townsville,	65	
Loilo,	73	
Painters' Colours—		
M. Video,	qty.	
Rotterdam,	£6	
B. Ayres,	26	
Gibraltar,		
Singapore,	120	
Paraffin Wax—		
Cape Town,	£90	
Italy,	58	
Sicily,	25	
Potassium Bichromate—		
Italy,	£493	
Yokohama,	757	
Potassium Cyacide—		
Singapore,	£67	
Townsville,	1,900	
Sheep Dip—		
B. Ayres,	£125	
Soap—		
E. London,	2 t. 10 c.	
New York,	1 7½	
Sodium Bicarbonate—		
Bordeaux,	5 t. 6½ c.	
Sodium Bichromate—		
Italy,	7 t. ½ c.	
Starch—		
Germany,	2 t. 10 c.	
Treacle—		
Christiania,	1 t. 7½ c.	
Gothenburg,	14 1½	
Varnish—		
Adelaide,	£32	
Tokio,	£37. 108.	
Whiting—		
Bombay,	£38. 168.	

TYNE.

Week ending August 7th.

Alkali—		
Amsterdam,	20 t. 19 c.	
Riga,	14 19	
Rotterdam,	1 13	
Ammonia (Liquid)—		
Aarhus,	1 t.	
Ammonium Chloride—		
Hamburg,	10 c.	
Ammonium Sulphate—		
Hamburg,	150 t.	
Odense,	5	
Antimony—		
Hamburg,	11 t.	
Copenhagen,	1	
Rotterdam,	4 10 c.	
Arsenic—		
Naples,	10 c.	
Asbestos—		
Bergen,	5 c.	
Barium Carbonate—		
Riga,	3 t.	
Bleaching Powder—		
Konigsberg,	5 t. 16 c.	
Bergen,	16 1	
Amsterdam,	32 11	
Riga,	20 4	
Hamburg,	6 13	
Antwerp,	80 16	
Copenhagen,	8 14	
Rotterdam,	24 8	
Odense,	4 16	
Christiania,	9 19	
Trieste,	2 12	

Caustic Soda—

Bergen,	1 t. 9 c.
Harlingen,	4 18
Amsterdam,	4 1
Hamburg,	24 7
Antwerp,	10 7
Copenhagen,	5 16
Aarhus,	2 6
Ghent,	2 14
Odense,	1 3
Trieste,	32 18
Konigsberg,	20

Litharge—

Harlingen,	5 c.
Riga,	5 t. 10
Copenhagen,	1 10
Dunkirk,	10

Magnesia—

Hamburg,	2 c.
Antwerp,	2 11
Baicalona,	4 t. 1

Naphthaline—

Riga,	24 t. 15 c.
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Paint—

Rotterdam,	5 c.
Hamburg,	23 bls.
Antwerp,	1 t. 15
Christiania,	2

Saltetre—

Aalborg,	5 t. 7 c.
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Soda—

Bergen,	5 t. 3
Amsterdam,	20 10
Hamburg,	2 10
Antwerp,	5 5
Aarhus,	5 3
Rotterdam,	30
Christiania,	5 3

Soda Ash—

Riga,	1 t. 8 c.
Christiania,	1 17
Konigsberg,	92 7

Sodium Hyposulphite—

Genoa,	4 t. 17 c.
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Sulphur—

Riga,	10 t. 1 c.
Konigsberg,	3

Superphosphates—

Riga,	38 t. 7 c.
Copenhagen,	2 t. 15 c.

White Lead—

Copenhagen,	2 t. 15 c.
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GOOLE.

Week ending August 4th.

Alkali—		
Rotterdam,	1 ck.	
Benzol—		
Boulogne,	25 cks.	
Rotterdam,	50	
Chemicals (otherwise unscr.)		
Amsterdam,	10 cks.	
Antwerp,	4	
Hamburg,	21	
Coal Products (otherwise unscr.)		
Boulogne,	51 cks. 1 cs.	
Ghent,	6 1	
Hamburg,	41	
Harlingen,	1	
Rotterdam,	97 4	
Colours—		
Boulogne,	1 ck. 1 cs. 5 tins	
Ghent,	1	
Harlingen,	3	
Rotterdam,	1	
Mauve—		
Bruges,	104 bgs.	
Dunkirk,	500	
Ghent,	385	
Pitch—		
Antwerp,	102 t.	
Salt Cake—		
Ghent,	100 t.	

GRIMSBY.

Week ending August 7th.

Caouchouc—		
Port au Prince,	1 cs.	
Coal Products (otherwise unscr.)		
Rotterdam,	40 t.	
Colours—		
Antwerp,	1 ck.	
Dieppe,	10 brls.	
Hamburg,	3	1 dm.
Soap—		
Malmo,	1 cs.	

PRICES CURRENT.

[WEDNESDAY, AUGUST 18TH, 1897.]

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.B. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary

Acids:—

	£	s.	d.
Acetic, 25 %, and 40 %	per cwt.	5/6	& 8/6
" Glacial	"		40/-
Arsenic S.G., 2000°	"	1	4 0
Fluoric	per lb.	0	0 3½
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0 10
" (Cylinder), 30° Tw.	"	0	3 0
Nitric 80° Tw.	per lb.	0	0 1½
Nitrous	"	0	0 1½
Oxalic	nett	0	0 3½
Phosphoric, 1750°	"	0	0 11½
Picric	"	0	0 11
Sulphuric (fuming 50 %)	per ton	15	10 0
" (monohydrate)	"	5	10 0
" (Pyrites, 168°)	"	3	0 0
" " 150°	"	1	5 0
" " (free from arsenic, 145°)	"	1	7 6
Sulphurous (solution) S.G. 1025	"	3	0 0
Tannic (pure)	per lb.	0	1 2½
Tartaric	"	0	1 1
Arsenic, white powdered	nett per ton	22	5 0
Alum (loose lump)	"	4	10 0
Alumina Sulphate (pure)	"	4	2 6
Aluminoferic	"	2	3 6
Aluminium (Ingot metal 98/99¾ %	nett	148	0 0
Ammonia, Anhydrous	per lb.	0	1 3
" 880=28° B.	"	0	0 2¾
" " =24° B.	"	0	0 1¾
" Carbonate	nett	0	0 3
" Muriate	per ton	18	0 0
" " (sal-ammoniac) 1st & 2nd	per cwt.	31/-	& 31/-
" Nitrate	per ton	33	0 0
" Phosphate	per lb.	0	0 3½
" Sulphate (grey) London	per ton	7	10 0
" " (grey) Hull	"	7	11 3
Aniline Oil (pure)	per lb.	0	0 7½
Aniline Salt	"	0	0 7
Antimony	per ton	29	15 0
" (tartar emetic)	per lb.	0	0 9
" (golden sulphide)	"	0	0 10
Barium Chloride	per ton	6	10 0
" Carbonate (native)	"	3	10 0
" Sulphate (native levigated)	"	42/6	to 65/-
Bleaching Powder, 35 %	nett	6	7 6
" Liquor, 7 %	"	3	10 0
Bisulphide of Carbon	"	12	0 0
Chromium Acetate (crystal)	per lb.	0	0 6
Calcium Chloride	per ton	2	2 6
China Clay (at Runcorn) in bulk	"	15/-	to 30/-

Coal Tar Products and Dyes:—

Alizarine (artificial) 20 %	nett per lb.	0	0 5¾
Magenta	"	0	3 9
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0	0 6½
Benzol, 90's	per gallon	0	2 0
" 50/90	"	0	2 0
Carbolic Acid (crude 60°)	per gallon	0	2 0
" (crystallised 40°)	per lb.	0	0 7½
" (liquid 95/97%)	per gallon	0	1 0
Creosote (ordinary)	"	0	0 2½
" (filtered for Lucigen light)	"	0	0 3
Crude Naphtha 30 % @ 120° C.	"	0	0 11
Grease Oils, 22° Tw.	per ton	2	15 0
Pitch, f.o.b. Liverpool or Garston	"	1	0 0
Solvent Naphtha, 90 % at 160°	per gallon	0	1 7
Copper	per ton	48	16 3
" Sulphate	"	16	10 0
" Oxide (copper scales)	"	44	10 0
Glycerine (crude)	"	30	0 0
" (distilled S.G. 1250°)	"	60	0 0
Iodine	nett, per oz.	0	0 7½
Iron Sulphate (copperas)	per ton	1	10 0
" Sulphide (antimony slag)	"	2	0 0
Lead (sheet) for cash	"	14	0 0
" Litharge Flake (ex ship)	"	14	15 0
" Acetate (white)	"	22	0 0
" " (brown)	"	15	0 0
" Carbonate (white lead) pure	"	16	15 0
" Nitrate	"	19	0 0

Lime, Acetate (brown) (ex ship)	per ton	4	17 6
" (grey) (ex ship)	"	8	0 0
Magnesium (ribbon and wire)	per oz.	0	2 3
" Chloride (ex ship)	per ton	2	10 0
" Carbonate	per cwt.	1	17 6
" Calcined Magnesia	per ton	8	0 0
" Sulphate (Epsom Salts)	per ton	2	15 8
Manganese, Sulphate	"	16	0 0
" Borate	per cwt.	2	10 0
" Ore, 70 %	per ton	3	10 0
Methylated Spirit, 61° O.F.	per gallon	0	1 8
Naphtha (Wood), Solvent	"	0	2 9
" Miscible, 60° O.F.	"	0	3 9

Oils:—

Cotton-seed	per ton	16	10 0
Linseed	"	17	15 0
Stearine	per ton	22	0 0
Phosphorus (yellow)	per lb.	0	2 2
" (red)	"	0	2 8
Potassium (metal)	per oz.	0	3 7
" Bichromate	nett per lb.	0	0 4½
" Carbonate, 90 % (ex ship)	per ton	16	10 0
" Chlorate	per lb.	0	0 4
" Cyanide, 98 %	"	0	0 10½
" Hydrate (Caustic Potash) 90 %	per ton	23	15 0
" " (Caustic Potash) 75/80 %	"	20	0 0
" " (Caustic Potash) 70/75 %	"	19	10 0
" Nitrate (refined)	per cwt.	1	1 6
" Permanganate	per cwt.	3	15 0
" Prussiate Yellow	per lb.	0	0 5½
" Sulphate, 90 % (ex ship)	per ton	9	15 0
" Muriate, 80 % (do.)	"	8	10 0
Silver (metal)	per oz.	0	2 0 11
Sodium (metal)	per lb.	0	2 11
" Carb. (refined Soda-ash) 48 %	nett per ton	4	15 0
" " (Caustic Soda-ash) 48 %	"	4	5 0
" " (Carb. Soda-ash) 48 %	"	4	0 0
" " (Alkali) 58 %	"	3	17 0
" " (Soda Crystals)	"	2	5 0
" Acetate (ex-ship)	"	12	0 0
" Arseniate, 45 %	"	14	7 6
" Chlorate	per lb.	0	0 4½
" Borate (Borax)	net, per ton	14	15 0
" Bichromate	per lb.	0	0 3½
" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	"	8	15 0
" " (74 % Caustic Soda)	"	8	0 0
" " (70 % Caustic Soda)	"	7	2 6
" " (60 % Caustic Soda)	"	6	2 6
" " (pure liquor 90° Tw.)	"	3	12 6
" " 77/78 % powdered (99 % hydrate)	"	12	10 0
" Bicarbonate	"	6	10 0
" Hyposulphite	"	5	0 0
" Manganate, 25 %	"	15	0 0
" Nitrate (95 %) ex-ship Liverpool	per cwt.	0	7 6
" Nitrite, 98 %	per ton	27	10 0
" Phosphate	"	10	10 0
" Silicate (glass)	per ton	4	10 0
" " (liquid, 100° Tw.)	"	3	7 6
" Stannate, 40 %	per cwt.	3	2 9
" Sulphate (Salt-cake)	per ton	0	19 0
" " (Glauber's Salts)	"	1	7 6
" Sulphide	"	6	15 0
" Sulphite	"	5	0 0
Strontium Hydrate, 100 %	"	10	15 0
Sulphocyanide Ammonium, 95 %	per lb.	0	0 6
" Barium, 95 %	"	0	0 4½
" Potassium	"	0	0 6½
Sulphur (Flowers)	per ton	7	10 0
" (Roll Brimstone)	"	6	10 0
" Brimstone: Best Quality	"	4	12 6
Superphosphate of Lime (26 %)	"	2	5 0
Tallow	"	19	10 0
Tin Crystals	per lb.	0	0 4½
" English Ingots	per ton	65	10 0
Zinc (Spelter)	"	17	5 0
" Chloride (solution, 100° Tw.)	"	4	17 6
" Sulphate, Crystal	"	5	2 6

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Vol. XXI.

Contents.

	PAGE		PAGE
British Trade in Russia ..	129	Trade Notes	136
Legal Intelligence.....	130	Tar and Ammonia Products	136
Exports of Petroleum from U.S.A. 130		Miscellaneous Chemical Market ..	136
The Patent List	131	The Metal Markets	136
Abstracts of Latest Complete Spec-		Report on Manure Material	137
ifications	131	Liverpool Oil and Colour Market..	137
Platinum Trade of Russia	131	Hull Paint, Oil, and Colour Report	137
The British Association	132	West of Scotland Chemicals	137
The Manchester Sewage Scheme ..	133	Tyne Chemical Report	137
Selected Correspondence	134	New Companies.....	138
Manganese and Kaolin in U.S.A. 134		Imports.....	138
British Capital and Russian Enter-		Exports	140
prises	135	Prices Current	144
The World's Supply of Quinine ..	135		

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BRITISH TRADE IN RUSSIA.

IT is well known that British manufacturers have a kind of antipathy to Russia as a field for trade, and it is characteristic that having once adopted this feeling it should be blindly adhered to year in year out, regardless of any changes that time may bring or the "push" of competitors may necessitate.

Now that we have a committee devoting their energies to the investigation of ways and means for promoting British trade abroad some of this insular prejudice may gradually be overcome.

It is true English firms seem to meet with comparatively little success, but it is scarcely surprising, as they often adopt commercial methods that court failure.

The distribution in foreign countries of catalogues in the English language and with English weights has often been condemned by our consuls, but even when their advice is acted on it frequently turns out that the system of distribution is defective.

As a means of combating this defect, it would be as well to pay closer heed to the numerous exhibitions that are held. Though it might not be possible to co-operate and form a British Section at all of them—a course which is not so difficult as it may appear at first—such exhibitions afford excellent opportunities for catalogue distribution, because there is not the need for the same care in the choice of an agent as there is under other circumstances, to which we shall refer later. At the same time the Russian public who congregate at such places can be acquainted with British goods suited to their requirements, even if they are not able to purchase them *in situ*.

The absence of commercial travellers is another point capable of amendment, not only as regards scarcity, but also in the matter of qualification. German travellers armed with a knowledge of Russian and the local customs, go their rounds with a good collection of samples, or analyses and drawings of those goods too large to carry from town to town. It is only through such instruments that manufacturers can be sure of adapting their goods to the tastes and convenience of their customers, and this is an essential to success in trading with Russia, as our Teutonic brethren have demonstrated. There are not wanting competent Englishmen resident in Russia who are both dependable and qualified to represent British houses in this way.

To refer once more to the choice of agents, there are one or two points that require attention. Although a manufacturer must judge for himself whether his interests will best be served by appointing a sole agent or not, there is no doubt that it is decidedly advisable to reduce the number of hands through which goods pass, as much as possible.

Cases could be cited where sole agents have proved detrimental to business, as opposed to the use of separate agents

in the large towns, and Germany has been known to take orders through the absolute refusal of British firms to deal direct on any terms whatever.

Thus, though the election of sole or district agents is a matter of choice, the selection of the individuals presents no alternative. It must be made with care, on sound references; and however considerable the trouble at the outset, it will be amply repaid in the end. There are two classes of agents—one of British extraction—and the other of Hebrew descent, who have a "good connection," but who get orders regardless of commercial stability, and pocket their commissions, albeit knowing that they have saddled their principals with a bad debt.

Lastly, it is now an established fact that the largest business is done by the firms who give the longest credit, and this can only be done safely with the aid of trustworthy local residents whose orders can be relied on, and who can advise when any signs of decay intervene between the order and the time of settlement.

A few words on British capital in Russia may not be out of place. About six months ago we had occasion to refer in the *Journal* (No. 509) to South Russia and the opening it affords for the development of chemical enterprise. We also, recently, had an exhaustive article on the state of the Russian chemical trade, while this week there is a further reference to the continued absence of British capital in Russia (p. 135).

In addition to the foregoing, there are a few other incidents to which it may be well to call attention. There is not a single consular report on Russia in which it is not repeatedly pointed out that the main drawback to the progress of British trade in Russia is the unsuitableness of British goods, partly because what with transport and commissions they are too expensive for the local markets when they reach them, and, above all, because manufacturers—at least, British manufacturers—will not alter the style of their goods.

This being so, is there not reason to suppose that goods produced in Russia, with English capital, would be more suited to local requirements, and possibly enhanced by the fact of their local production.

It is conducive to the interests of capitalists that the owners of land with mineral resources in Russia are inclined to be apathetic. Though they may find iron ore, they seldom take the initiative in ascertaining the extent of such prospects of mineral wealth. For instance, deposits of feldspath and kaolin have been found near Nicolaiev, which promise to be sufficiently extensive to supply a porcelain factory. No such factory exists in this part of Russia, and yet nothing at present is being done to test the possibilities of the deposits.

It may naturally be asked why Russian capital is not forthcoming, but it is not hard to find the answer in a country where money is very scarce, and fetches high rates of interest on sound securities. Eight per cent. is to be had for mortgages on real estate without the slightest risk.

To capitalists, therefore, in this country, where outlets for money are scarce (even when bearing a low percentage, and that not without risks), the openings in other countries are surely worthy of investigation.

French, Belgian, and German capital has of late been constantly introduced into mining and other industries in South Russia, and, what is more, to good purpose. This being so, is it frivolous to ask—"If continental capital, why not British?" In our own estimation we think not. An El Dorado is seldom to be found, but personally we should fancy South Russia as a field for capital to Klondike or Yukon.

Legal Intelligence.

HIGH COURT OF JUSTICE.

QUEEN'S BENCH DIVISION.

(Before Mr. Justice Wills, without a jury.)

WOODS V. THE CRYSTAL MANUFACTURING COMPANY, LIMITED.

This was an action brought by Mr. J. E. Tennison Woods, of 38, Chantry-road, Stockwell, S.W., against the defendant company, whose offices are at 4, Tokenhouse-buildings, Moorgate-street, to recover a sum of £143., balance of salary which he claimed to be due to him from the defendants as a technical engineer. The case for the plaintiff was that in August, 1896, he was engaged at a salary of £5. a week—£2. a week to be paid and the rest to accumulate until apparatus for manufacturing artificial camphor by a process he had invented should be erected. The works were completed and at work early in September. During 1896 £2. a week was paid, but from about March 6th to May 29th, 1897, nothing was paid. Upon the latter date on going to the works he found them closed, and had not been there since, nor had he received any notice terminating the engagement. The defence was that the plaintiff was only to receive £5. a week in the event of his enabling the defendants to manufacture artificial camphor from which good marketable celluloid could be made, otherwise he was only to receive £2. a week. The defendants said that the plaintiff never enabled the defendants to make such camphor. The plaintiff, on the other hand, said that there never was any such arrangement, although he had in fact enabled the defendants to make the camphor. No proper plant for manufacturing celluloid was, however, erected by the defendants.

Mr. Morton Smith appeared for the plaintiff; Mr. Chester Jones for the defendants.

Mr. Justice Wills, in giving judgment, said that the evidence was very conflicting, but he had come to the conclusion that the defendants' version of the terms of the plaintiff's engagement was the correct one. The question therefore arose as to whether the plaintiff had enabled the defendants to manufacture an artificial camphor from which good marketable celluloid could be made, and he had come to the conclusion that the plaintiff had succeeded in so doing. There must be judgment for the plaintiff for £5. a week to the end of April, amounting to £121.

Judgment accordingly.

EXPORTS OF PETROLEUM FROM U.S.A.

THE Chief of the Bureau of Statistics, Washington, gives the following returns of the exports of petroleum and petroleum products for June, 1897. The total shipments were 96,569,600 gallons, compared with 79,116,959 gallons in 1896. The total for the twelve months ending June 30th, 1897, was 963,924,021 gallons, against 880,854,125 gallons during the same period in 1896. The details of the shipments are as follow:—

CRUDE PETROLEUM.		(Gallons.
Total, June, 1897	.....	13,279,741
" " 1896	.....	6,787,715
NAPHTHAS.		
Total, June, 1897	.....	1,725,877
" " 1896	.....	845,003
ILLUMINATING.		
Total, June, 1897	.....	75,362,563
" " 1896	.....	67,296,955
LUBRICATING AND PARAFFIN.		
Total, June, 1897	.....	3,709,853
" " 1896	.....	4,186,320
RESIDUUM.		
Total, June, 1897	.....	2,491,566
" " 1896	.....	966

DEATHS FROM PETROLEUM ACCIDENTS.—In his annual review of the work done by the London County Council during the official year, Dr. Collins, the chairman, stated that 370 casualties arising out of lamp accidents, causing forty deaths, were investigated. "It would appear," said the chairman, "that the flash-point of the oil burnt in lamps, as well as the construction of the lamps, requires to be taken into account in suggesting means for the prevention or reduction of risks." This week, Robert Heaton, a joiner, living in Reather-street, Rochdale-road, Manchester, was admitted into the Royal Infirmary suffering from serious injuries caused by the explosion of a paraffin lamp. Heaton was putting out the lamp when it suddenly exploded. He was terribly burned about the head and hands.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

- Removing and Preventing Boiler Incrustation. M. J. Kelly. 18,460. August 9.
 Biological Filters for Sewage, etc. W. M. Ducat. 18,488. August 9.
 Manure from Wool Refuse. J. Hudson. 18,491. August 9.
 Manufacture of Varnishes, Paint, etc. J. Goldblum. 18,519. August 10.
 Extracting Oils from Flax and other Seeds. A. Euston. 18,550. August 10.
 Purification of Sewage. W. D. Scott-Moncrieff. 18,555. August 10.
 Apparatus for Absorbing Gases in Liquids. H. Hirzel. 18,578. August 10.
 Aluminium Solder. W. Allen. 18,607. August 11.
 Producing Sulphates from "Waste" Sulphuric Acid. J. S. Rigby. 18,614. August 11.
 Improvements in Coke Ovens. F. J. Collin. 18,639. August 11.
 Extracting Gold. J. Laudin. 18,640. August 11.
 Filter Presses and Cloths Therefor. J. C. Montgomerie. 18,655. August 10.
 Apparatus for Inducing Artificial Respiration. E. L. Dozen. 18,695. August 12.
 Aluminium Solder. F. Georg. 18,731. August 12.
 Manufacture of Cement. T. Holden and C. Major. 18,777. August 13.
 Improvements in Electrolytic Cells. S. Z. de Ferranti. 18,833. August 14.
 Sewage, etc., Precipitation Tanks. B. C. Farmer. 18,839. August 14.

ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

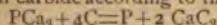
These abstracts are specially prepared for the Chemical Trade Journal, and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.

An Improved Electrolyser, or Electrolytic Apparatus. J. G. A. Rhodin, 104, Gilda Brook Road, Eccles. Eng. Pat., 21,509. Sept. 29, 1896.

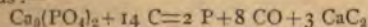
This cell is for use with a mercury cathode. An outer cylindrical dish, with a ribbed bottom, contains an inverted cup, the mouth of which is partially closed, so as to leave oblong openings near the circumference, which thus form connections with the interior of the cup. These openings are sealed by the mercury in the bottom of the outer dish. Carbon anodes are fixed in the top of the cup, and dip into the openings in the bottom, but do not touch the surface of the mercury. In working, this inverted cup is revolved slowly, the amalgam formed on the mercury inside being mixed with the mercury outside, and decomposed by the supernatant water, the electrolyte being fed into the interior of the cup. There are three figures.

An Improved Process of Manufacturing Phosphorus. L. L. Billaudot, 18, Avenue Victoria, Paris. Eng. Pat., 15,977. July 18, 1896.

Phosphates of alkaline earths, such as aluminium phosphate and tri-basic phosphate of lime, are reduced in an electric crucible with carbon to form the phosphide. By continuing the treatment without an excess of base, the phosphide is decomposed with the liberation of phosphorus and formation of calcium carbide according to the following equation:—



The two operations are generally carried out in the same crucible, an excess of base being avoided, when the complete reaction may be represented thus:—



An additional advantage of this process is that phosphides easily decomposed by heat can be obtained, such as phosphides of copper and tin. The phosphide of iron formed in blast furnaces can be treated in the electrical furnace to yield phosphorus. Where it is not desirable to obtain the phosphorus direct, the phosphide obtained in the electric furnace can be decomposed with water into phosphoretted hydrogen, from which the phosphorus can be separated by dissociation.

Improvements in Cements for Resisting the Action of Acids, Acid Vapours, and Heat. J. C. Rombach, Cambrian Hotel, and E. S. Restiaux, Morgan-road, both of Melincroft, Neath. Eng. Pat., 12,024. May 15, 1897.

A boiling solution of silicate of soda is mixed with asbestos powder. Additions in the form of alumina and sulphate of lime may be made, the mixture being dried and saturated with alum water. When thinned to form a covering for porous brick walls, &c., the surface must be carefully dressed with the composition, and after a few hours washed with weak hydrochloric acid.

Improvements in the Treatment of Blood and other Albuminous Matter, both Animal and Vegetable, for Use in Manufactures and Arts. P. G. Sanford, 20, Cullum-street, London. Eng. Pat., 12,449. May 10, 1897.

The process is as follows:—100 parts by weight of dry blood scales, and an equal amount of defibrinated blood are rubbed down in a dry

mortar with 20 to 30 parts by weight of ammonium fluoride (or its equivalent in boro-fluoride of ammonium, potassium or sodium) with or without the addition of borax. Water is added to form an emulsion and dialysed at 25° to 30° C., the pan of the dialyser being filled with water. The substance on the diaphragm should have a sp. gr. of 1.022 to 1.052 and contain 50 to 200 grammes per litre of active materials, precipitated by heat or with picric-acid in the cold. To hasten the dialysing, the bloodscales may be placed on the diaphragm and the pan filled with the fluoride solution, but by this method more extraneous matters enter into solution. In using fresh blood it should be allowed to serumise, the clotted portion being used. Bran and similar substances may be treated as above, using one part of ammonium fluoride to 150 parts by weight of bran.

A New Process of Manufacture of Double Chloride of Aluminium and Soda. Compagnie Générale L'alumine Exploitation des Brevets F. Raynaud, Soc. Anom., 27, Place de Brouckère, Brussels. Eng. Pat., 12,266, May 18, 1897. (Under Inter-Convention. Nov. 19, 1896.)

Ferruginous bauxite, sea salt, and carbon are moulded into porous bricks, which are heated in gas retorts or similar receptacles. When red-hot, a current of hydrogen sulphide gas is passed over the bricks, reducing the iron to sulphide. After complete reduction air is passed. Sulphate of soda then forms, and double chloride of aluminium and soda is volatilized, being collected in suitable receivers. The alternate treatment with hydrogen sulphide and air is continued until all the aluminium is converted. The sulphate of soda is contaminated with sulphide.

Improvements in the Manufacture of Soap. E. S. Wilson, Arthiog., Goddington-road, Stroud, and E. Stewart, 94, Queen Victoria-street, London. Eng. Pat., 21,048. Sept. 23, 1896.

The object is to prepare an emollient toilet soap not liable to turn rancid. For this purpose the meal obtained after the expression of the oil from linseed and other oleaginous seeds, is ground and incorporated with a good soap during the milling process. Oil-bearing nuts, etc., are included under seeds in the sense of this patent.

PLATINUM TRADE OF RUSSIA.

THE mineral sources of Russia are doubtless imperfectly understood.

Russia is so vast, and its people so far behind the times, that much relating to what are doubtless its most important features are comparatively unknown. There is no doubt, however, that at the present time Russia is the greatest producer of platinum in the world. It is estimated that the output of platinum from Russian sources is nearly 50 times greater than that of the whole world. The Russians have certainly recognised the importance of the platinum industry, and in 15 years its output has been doubled. Nearly 6,000 kilogrammes of this rare metal is now placed upon the market per annum. Russia, however, confines its attention to merely mining the ore, which is found entirely in the Southern Ural District. Germany imports the ore, and makes it up into metal, so that what metal Russia requires she has to buy back again from Germany. There is an interesting article in a recent issue of the "Handel's Museum," which is really a report by the Russian Ministry of Finance on the production of platinum. Those who are largely interested in this metal should not fail to read it. Attention is called to the high price which has ruled during the last few years. Even at the present time raw platinum costs £45. per kilogramme. It used to be thought that platinum ore would be a prolific source of iridium, but the anticipations have not been justified, this rare metal being only found in small quantities. Last year only 4.1 kilogrammes were obtained. Evidently those who think that this metal is going to play a great part in the fatality of the future will have to look elsewhere for a source of it.

THE SPANISH PETROLEUM MONOPOLY.—The Secretary of State for Foreign Affairs has received a despatch from her Majesty's ambassador at Madrid, enclosing a copy of a Royal decree, containing the conditions on which tenders are invited for the petroleum monopoly in Spain. The tenders must be received in Madrid by September 12. The papers in question may be inspected at the Commercial Department of the Foreign Office any day between the hours of 11 and 6.

PERSONAL.—We are pleased to learn that the efforts of Mr. Alexander M. Chance to bring to an end the dispute which has arisen between masters and men in the South Staffordshire and East Worcestershire brick trade have been successful. Mr. Chance, as one interested in the progress and welfare of the inhabitants in the localities affected (being the head of the well-known alkali and glass works at Oldbury), offered his services as mediator, and they were readily accepted on both sides. His exertions have been crowned with the success they deserve, and he has enabled employers and employed to resume their former relationship, restored the good-feeling between them, and set some three thousand men who have hitherto been idle at their usual labours again.

THE BRITISH ASSOCIATION.

ADDRESS TO THE CHEMICAL SECTION.

THE address of the President of the Association this year contained little of chemical interest, but Professor William Ramsay, Ph.D., LL.D., D.Sc., F.R.S., president of the Section B (chemistry), delivered his address on Thursday last week, in which he reviewed the evidence for the existence of an undiscovered element.

He recalled the fact that it was noticed by Döbereiner, as long ago as 1817, that certain elements could be arranged in groups of three. The choice of the elements selected to form these triads was made on account of their analogous properties, and on the sequence of their atomic weights, which had at that time only recently been discovered. Another method of classifying the elements, also depending on their atomic weights, was suggested by Pettenkofer, and afterwards elaborated by Kremers, Gladstone, and Cooke. It consisted in seeking for some expression which would represent the differences between the atomic weights of certain allied elements. The upshot of these efforts to discover regularity was that, in 1864, Mr. John Newlands, having arranged the elements in eight groups, found that when placed in the order of their atomic weights "the eighth element, starting from a given one, is a kind of repetition of the first, like the eighth note of an octave in music." To this regularity he gave the name "The Law of Octaves." The development of this idea, as all chemists know, was due to the late Professor Lothar Meyer, of Tübingen, and to Professor Mendeléeff, of St. Petersburg. It is generally known as the "Periodic Law."

REASONS FOR EXPECTING A NEW ELEMENT.

It will be found, according to Lothar Meyer and Mendeléeff, that the elements grouped down each of the vertical lines in their table form a natural class; they possess similar properties, form similar compounds, and exhibit a graded relationship between their densities, melting points, and many of their other properties. One of these vertical columns, however, differs from the others, inasmuch as on it there are three groups, each consisting of three elements with approximately equal atomic weights. The elements in question are iron, cobalt, and nickel; palladium, rhodium, and ruthenium; and platinum, iridium, and osmium. There is apparently room for a fourth group of three elements in this column, and it may be a fifth. And the discovery of such a group is not unlikely, for when this table was first drawn up Professor Mendeléeff drew attention to certain gaps, which have since been filled up by the discovery of gallium, germanium, and others. Argon, with a density of nearly 20, if a diatomic gas, like oxygen and nitrogen, would follow fluorine in the periodic table; and his first idea was that argon was probably a mixture of three gases, all of which possessed nearly the same atomic weights, like iron, cobalt, and nickel. But the ratio of its specific heats showed that it was molecularly monatomic; it was necessary to believe that its atomic weight was 40, and not 20, and that it followed chlorine in the atomic table, and not fluorine. Another possibility is that argon, as at first conjectured, may consist of a mixture of more than one element, but very careful experiments have practically demonstrated that argon is a simple substance, and not a mixture. The discovery of helium has thrown a new light on this subject. The density of helium proved to be very close to 2.0, and, like argon, the ratio of its specific heat showed that it, too, was a monatomic gas. Its atomic weight, therefore, is identical with its molecular weight viz., 4.0, and its place in the periodic table is between hydrogen and lithium, the atomic weight of which is 7.0. The difference between the atomic weights of helium and argon is thus 36. Now there are several cases of such a difference between the first and third terms of such triads as fluorine, chlorine, manganese; carbon, silicon, titanium. There should, therefore, be an undiscovered element between helium and argon, with an atomic weight 16 units higher than that of helium, and 20 units lower than that of argon—namely 20. And if this unknown element, like helium and argon, should prove to consist of monatomic molecules, then its density should be half its atomic weight, 10. And pushing the analogy still further, it is to be expected that this element should be as indifferent to union with other elements as the two allied elements.

SEARCH FOR A NEW GAS.

Professor Ramsay and Mr. Morris Travers proceeded to search for this unknown gas. They first directed attention to the sources of helium—minerals. Almost every mineral which could be obtained was heated in a vacuum, and the gas which was evolved examined. The gas from hot springs in Iceland and the Pyrenees was studied, but in vain. Shortly after the discovery of helium, its spectrum was very carefully examined by Professors Runge and Paschen, the renowned spectroscopists. The spectrum was photographed, special attention being paid to the invisible portions, termed the "ultra-violet" and "infra-red." The lines thus registered were found to have a harmonic relation to each other. They admitted of division into two sets, each complete in itself. Now, a similar process had been applied to the

spectrum of lithium and to that of sodium, and the spectra of these elements gave only one series each. Hence, Professors Runge and Paschen concluded that the gas, to which the provisional name of helium had been given, was in reality a mixture of two gases, closely resembling each other in properties. As we know no other elements with atomic weights between those of hydrogen and lithium, there is no chemical evidence either for or against this supposition. These considerations, however, made it desirable to subject helium to systematic diffusion, and the experiments were carried out in the summer of 1896 by Dr. Collie and Professor Ramsay. It was found possible to separate helium into two portions of different rates of diffusion, and consequently of different density, by this means. The limits of separation, however, were not very great. On the one hand, there was obtained gas of a density close on 2.0; and on the other, a sample of density 2.4 or thereabouts. The difficulty was increased by the curious fact that helium possesses a rate of diffusion too rapid for its density. The two samples of gas of different density differ also in other properties. Lord Rayleigh found that helium offers less opposition to the passage of light than any other substance does, and the heavier of the two portions into which helium had been split offered more opposition than the lighter portion. And the retardation of the light, unlike what has usually been observed, was nearly proportional to the densities of the samples. The spectrum of these two samples did not differ in the minutest particular; therefore it did not appear quite out of the question to hazard the speculation that the process of diffusion was instrumental not necessarily in separating two kinds of gas from each other, but actually in removing light molecules of the same kind from heavy molecules. This idea is not new. It had been advanced by Professor Schützenberger (whose recent death all chemists have to deplore), and later, by Sir W. Crookes, that the atomic weight of an element is a mean; that when one says that the atomic weight of oxygen is 16, one merely states that the average atomic weight is 16; and it is not inconceivable that a certain number of molecules have a weight somewhat higher than 32, while a certain number have a lower weight. Experiments were tried on nitrogen with purely negative results, and these experiments rendered it exceedingly improbable that the difference in density of the two fractions of helium was due to separation of light molecules of helium from heavy molecules. After 180 diffusions of helium the density of the lightest portion of the gas was 1.98; and after other 15 diffusions the density of the lightest portion had not decreased. The end had been reached; it was not possible to obtain a lighter portion by diffusion. The density of the main body of this gas is therefore 1.98; and its refractivity, air being taken as unity, is 0.1245. The spectrum of this portion does not differ in any respect from the usual spectrum of helium. As rediffusion does not alter the density or the refractivity of this gas, it is right to suppose that either one definite element has now been isolated, or that, if there are more elements than one present, they possess the same, or very nearly the same, density and refractivity. There may be a group of elements, say three, like iron, cobalt, and nickel; but there is no proof that this idea is correct, and the simplicity of the spectrum would be an argument against such a supposition. This substance, forming by far the larger part of the whole amount of the gas, must, in the present state of knowledge, be regarded as pure helium. On the other hand, the heavier residue is easily altered in density by rediffusion, and this would imply that it consists of a small quantity of a heavy gas mixed with a large quantity of the light gas. Repeated rediffusion proved that there was only a very small amount of the heavy gas in the mixture. The spark spectrum revealed the presence of argon. The amount of argon present, calculated from the density, was 1.64 per cent., and from the refractivity 1.14 per cent. The conclusion had therefore to be drawn that the heavy constituent of helium, as it comes off the minerals containing it, is nothing new, but, so far as can be made out, merely a small amount of argon. If, then, there is a new gas in what is generally termed helium, it is mixed with argon, and it must be present in extremely minute traces. As neither helium nor argon has been induced to form compounds, there does not appear to be any method, other than diffusion, for isolating such a gas, if it exists, and that method has failed to give any evidence of the existence of such a gas. It by no means follows that the gas does not exist; the only conclusion to be drawn is that the investigators have not stumbled on the material which contains it. In fact, the haystack is too large and the needle too inconspicuous. Reference to the periodic table will show that between the elements aluminium and indium there occurs gallium, a substance occurring only in the minutest amount on the earth's surface; and following silicon, and preceding tin, appears the element germanium, a body which has as yet been recognised only in one of the rarest of minerals, argyrodite. Now, the amount of helium in fergusonite, one of the minerals which yields it in reasonable quantity, is only 33 parts by weight in 100,000 of the mineral, and it is not improbable that some other mineral may contain the new gas in even more minute proportion. If, however, it is accompanied in its still undiscovered source by argon and helium, it will be a work of extreme difficulty to effect a separation from these gases. In these re-

marks it has been assumed that the new gas will resemble argon and helium in being indifferent to the action of reagents, and in not forming compounds. In considering it, the analogy with other elements is all that there is to guide one, and that is entirely in its favour.

ARGON AND THE PERIOD LAW.

Leaving the consideration of the new element, Professor Ramsay turned to the more general question of the atomic weight of argon and its anomalous position in the periodic scheme of the elements. The apparent difficulty is this. The atomic weight of argon is 40; it has no power to form compounds, and thus possesses no valency; it must follow chlorine in the periodic table and precede potassium; but its atomic weight is greater than that of potassium, whereas it is generally contended that the elements should follow each other in the order of their atomic weights. If this contention is correct, argon should have an atomic weight smaller than 40. Between argon and the next in order, potassium, there is a difference of 0.9, that is to say, argon has a higher atomic weight than potassium by 0.9 unit, whereas it might be expected to have a lower one, seeing that potassium follows argon in the table. Further on in the table there is a similar discrepancy—a negative difference between tellurium and iodine. And this apparent discrepancy has led to many and careful redeterminations of the atomic weight of tellurium. Again, there have been almost innumerable attempts to reduce the differences between the atomic weights to regularity by contriving some formula which will express the numbers which represent the atomic weights, with all their irregularities. Needless to say, such attempts have in no case been successful. Apparent success is always attained at the expense of accuracy, and the numbers reproduced are not those accepted as the true atomic weights. Such attempts in his opinion, are futile. Still, the human mind does not rest contented in merely chronicling such an irregularity; it strives to understand why such an irregularity should exist.

ARE THE ATOMIC WEIGHTS CONSTANT?

And, in connection with this, there are two matters which call for consideration. These are:—Does some circumstance modify these "combining proportions" which we term "atomic weights"? And is there any reason to suppose that we can modify them at our will? Are they true "constants of nature," unchangeable, and, once for all, determined? Or are they constant merely so long as other circumstances, a change in which would modify them, remain unchanged? In order to understand the real scope of such questions, it is necessary to consider the relation of the "atomic weights" to other magnitudes, and especially to the important quantity termed "energy." It is known that energy manifests itself under different forms, and that one form of energy is quantitatively convertible into another form, without loss. It is also known that each form of energy is expressible as the product of two factors, one of which has been termed the "intensity factor," and the other the "capacity factor." In considering the "capacity factors," it is noticeable that they may be divided into two classes. The two first kinds of energy, kinetic and linear, are independent of the nature of the material which is subject to the energy. On the other hand, surface energy deals with molecules, and not with masses. So does volume energy. The volume energy of two grammes of hydrogen, contained in a vessel of one litre capacity, is equal to that of 32 grammes of oxygen at the same temperature and contained in a vessel of equal size. Equal masses of tin and lead have not equal capacity for heat; but 119 grammes of tin have the same capacity as 207 grammes of lead—that is, equal atomic masses have the same heat capacity. The quantity of electricity conveyed through an electrolyte under equal difference of potential is proportional, not to the mass of the dissolved body, but to its equivalent—that is, to some simple fraction of its atomic weight. And the capacity factor of chemical energy is the atomic weight of the substance subjected to the energy. Therefore, while mass or inertia are important adjuncts of kinetic and linear energies, all other kinds of energy are connected with atomic weights, either directly or indirectly. Professor Ramsay concluded as follows:—Such considerations draw attention to the fact that quantity of matter (assuming that there exists such a carrier of properties as we term "matter") need not necessarily be measured by its inertia or by gravitational attraction. In fact, the word "mass" has two totally distinct significations. Because we adopt the convention to measure quantity of matter by its mass, the word "mass" has come to denote "quantity of matter." But it is open to anyone to measure a quantity of matter by any other of its energy factors. I may, if I choose, state that those quantities of matter which possess equal capacities for heat are equal, or that "equal numbers of atoms" represent equal quantities of matter. Indeed, we regard the value of material as due rather to what it can do, than to its mass; and we buy food, in the main, on an atomic, or, perhaps a molecular basis, according to its content of albumen. And most articles depend for their value on the amount of food required by the producer or the manufacturer. The various forms of energy may therefore be classified as those which can be referred to as an "atomic" factor, and those which possess a "mass" factor. The former are in the majority. And the periodic law is the bridge

between them—as yet an imperfect connection. For the atomic factors, arranged in the order of their masses, display only a partial regularity. It is undoubtedly one of the main problems of physics and chemistry to solve this mystery. What the solution will be is beyond my power of prophecy; whether it is to be found in the influence of some circumstance on the atomic weights, hitherto regarded as among the most certain "constants of nature," or whether it will turn out that mass and gravitational attraction are influenced by temperature or by electrical charge, I cannot tell. But that some means will ultimately be found of reconciling these apparent discrepancies, I firmly believe. Such a reconciliation is necessary, whatever view be taken of the nature of the universe and of its mode of action, whatever units we may choose to regard as fundamental among those which lie at our disposal. In this address I have endeavoured to combine a little history, a little actuality, and a little prophecy. The history belongs to the Old World; I have endeavoured to share passing events with the New; and I will ask you to join with me in the hope that much of the prophecy may meet with its fulfilment on this side of the ocean."

The reports of the committees on the teaching of science in elementary schools and on the action of light on dyed colours were presented. The latter committee, during the past year, has examined a large number of wool and silk patterns, dyed with various black and brown colouring matters, with respect to their power of resisting the fading action of light, but is not prepared to present a report till next year.

THE MANCHESTER SEWAGE SCHEME.

THE CULVERT REDIVIVUS.

ON Monday this week the members of the Rivers Committee of the Manchester Corporation met to discuss the problem of how to deal with the sewage effluent from the works at Davyhulme. The matter was brought forward in a special report prepared by the Town Clerk for the consideration of the committee. In this document Mr. Talbot called the attention of the committee to the order made by the county justices in the Strangeways Police-court on the 16th September last, fining the Corporation £1. and costs for having knowingly permitted liquid sewage to flow into the Irwell and the Ship Canal contrary to the Mersey and Irwell Joint Committee Act, 1892, and directing the Corporation to perform its duty, and with the object of preventing such flow into the river and the canal to construct works within twelve months from that date. When the case was before the court, says the Town Clerk, it was stated that the Corporation intended forthwith to apply for Parliamentary permission to carry out a scheme for taking the effluent to Randle's Sluices. On the 18th November, the City Council resolved that in their opinion "the obligations of the Rivers Committee will be fully met, and no public injury will accrue by the proposed effluent conduit terminating in the river Mersey at a point near the township of Thelwall, below Woollaston Weir, being the highest tidal point of that river, and that the approval of the Corporation to that object being included in the Bill be given on that condition." In pursuance of that instruction the Woollaston scheme was included in the Manchester Corporation Bill, 1897. Petitions were presented in opposition by the Warrington Rural District Council, Corporation of Warrington, Cheshire County Council, Mersey and Irwell Joint Committee, Runcorn Rural District Council, Corporation of Liverpool, Mersey Docks and Harbour Board, Wallasey Urban District Council, Mr. Henry Stanton, Mr. J. V. Fox, and the Cheshire Lines Committee. The city ratepayers' meeting on March 4th last rejected the Woollaston scheme, and that portion of the Bill was not proceeded with. It was then thought practicable by some members of the Council to make satisfactory arrangements as regards artificial filtration, and there was every reason to suppose that the Mersey and Irwell Joint Committee would for that purpose have given a considerable extension of time. The Rivers Committee at once took up the question of artificial filtration, but their proceedings with regard thereto, of April 5th, were not approved by the Council. Since that date the subject had been much debated, both in the Rivers Committee and in the Purification Sub-committee, and opinions were greatly divided on the question, some members of the Sub-committee being desirous of reviving the consideration of the Randle's Sluices Scheme. Under these circumstances, the Town Clerk was instructed to forward a communication to Mr. Hulton, Clerk of the Mersey and Irwell Joint Committee, asking for six months' further time to prepare a scheme. The discussion which took place on the subject at the meeting of the Mersey and Irwell Joint Committee on the 9th inst. did not appear to have been unfavourable to the Randle's Sluices Scheme, but a disposition was manifested not to allow the six months asked for by the Corporation. It should be explained, adds the Town Clerk, that the object of the suggestion of six months was that the matter might be deliberately thought out, that communications might be made with the various public bodies interested, and a fully matured scheme be introduced into Parliament in the autumn of 1898, thus avoiding much friction and cost. It is to be hoped, he continues, that the public

bodies referred to will realise the reasons which preclude preliminary communication and explanations which the Manchester Corporation would have desired to make had they not been under the necessity of presenting and depositing their scheme in November, 1897. Under these circumstances the Rivers Committee concurred in the views now expressed by the Purification Sub-Committee, and the following course of procedure would be necessary to enable the notices for the Bill to be given and the necessary deposits made in November next:—"Resolved (by the Rivers Committee) that in view of the difficulties attending artificial filtration, and having regard to the volume and special character of the Manchester sewage, it appears preferable to discharge the effluent resulting from the chemical treatment and the precipitation of the sewage at the Corporation works at Davyhulme into the River Mersey, near Randle's Sluices, by means of a culvert, and that it be recommended to the Council to authorise the Rivers Committee to promote a Bill in Parliament for the purpose of conferring the necessary powers."

"Resolved that the above proceedings be embodied in the report to be presented to the City Council at its meeting on the 1st September next, and that under the exceptional circumstances the Lord Mayor be respectfully requested to place the consideration of such report as the first item of business in the Council notice."

"Resolved that upon the approval of the City Council of the report, the Lord Mayor be respectfully requested to convene meetings of the City Council and the owners and ratepayers at the earliest practicable date for the purpose of confirming or otherwise the promotion of the Bill."

"Resolved that the city surveyor be instructed to provide cartoon plans and estimates for the above meetings."

The members of the Rivers Committee were practically unanimous. Further discussion on the subject was, however, adjourned for a few days, during which period the city surveyor was requested to report as to the best possible point at which to place the effluent outfall. At the adjourned meeting last Wednesday it was decided that on Wednesday next the Council be recommended to promote a Bill in Parliament to this end.

Selected Correspondence.

THE MANCHESTER SEWAGE QUESTION.

(To the Editor of the Manchester Guardian.)

SIR,—Up to the time of building the Ship Canal, the Manchester Sewage question had not assumed any acute form. The chief reason for treating the Manchester and Salford sewage is that, the water in the Ship Canal being stagnant, any suspended organic matter in the sewage is liable to deposit, become putrescent, and cause a nuisance, even if the water without the sediment did not emit an unpleasant smell. It is admittedly necessary to prevent this, and several schemes are proposed for doing so—First, to treat the whole of the sewage by precipitation, and pour the effluent into the canal. This has never yet been tried, as a large amount of untreated sewage is still allowed to enter the canal. If it be contemplated, as the least that can be done, to treat the sewage by precipitation, why should the experiment not be tried of doing this completely before going to any large expense to further treat the effluent from the precipitation process? Second, assuming the first to be undesirable, two methods are proposed to deal with this effluent; the one is to run it by a tunnel into the tidal water of the Mersey, and the other to treat it at enormous cost by artificial filtration.

The cost of building a tunnel, on the one hand, or of erecting filters on the other, is, we are told, about the same. The former we know to be a solution of the problem; the latter may prove to be a fiasco, and would certainly, after erection, be very costly to maintain. I fail to see why Manchester should not have the same rights as Warrington and Liverpool to pour the untreated sewage into the tidal waters of the Mersey by means of a tunnel. It is suggested that it would tend to silt up the estuary. I think this can be easily shown to be a delusion; if not, a good deal of silting up should be going on now, from the untreated sewage of Liverpool and Warrington, and it must be clear that anything which would flow for ten to fifteen miles down a sewer having such a gentle fall as that between Manchester and the tidal water would not silt up the estuary of the river, and it would be ridiculous to suppose that any such silting could take place from the effluent from precipitated sewage. I trust Manchester will claim the rights exercised by Warrington and Liverpool, to pour its untreated sewage into the tidal waters, and I think it should at least claim that right for the effluent from its precipitated sewage. The cost of a culvert for conveyance of the raw sewage, or the effluent, might be borne by Manchester and Salford together, with any of the townships higher up the stream which prefer to use the culvert, rather than spend money on the further purification of their effluents.—I am, etc.,

WILLIAM THOMSON.

MANGANESE AND KAOLIN IN U.S.A.

By J. NELSON NEVIUS.

DURING the past few months the Troy and New York Mining Company has been developing a property at South Wallingford, in Rutland County, Vermont, for a low grade of manganese ore and for paint stuffs. The work has been carried on entirely by means of a tunnel, 6 × 3½ feet in section, which slopes gently toward the entrance to drain off the water and to facilitate running out the cars. The main adit is about 1,800 feet long, and passes through about 500 feet of glacial drift and clay, which lie along the base of the Green Mountains, then turning to the left it cuts diagonally through 150 feet of silicious limestone tilted at about 40°, and in the centre of which are a few feet of ochre and decomposed limestone. Inside of this wall of silicious limestone is a mass of ochres, which enclose numerous bodies of manganese and iron ores. These ore bodies are not uniform in character, but vary from a rich manganese ore carrying but little iron (48 % Mn and 12 % Fe), through a medium grade carrying about 25 % to 30 % each of manganese and iron, to a fair quality of limonite carrying 4 % of manganese. The ochres also are diverse in character. There are immense quantities of two shades of yellow ochre that are very uniform in colour and contain but a small amount of grit, chiefly fine quartz fragments. There are also large deposits of a rich chocolate brown ochre, or umber, that lie next to the manganese ores and derive their colour from oxides of that metal. At some points a half-dozen shades and colours of ochres are blended together on a square yard of surface.

This deposit of ochres and ores (the ore channel of the mine) is limited on the farther side by a white quartz wall, the inner surface of which is crushed and broken. It is along this quartz wall that the kaolin is found.

The main drift follows along this quartz wall for a considerable distance, and it cuts the wall at a few points. There are seven exposures of kaolin along the drift, the largest extending for a distance of 38 ft. on one side of the drift and 28 ft. on the other side, the drift cutting through a solid mass of snow-white kaolin, absolutely free from the slightest trace of iron or other stain. At the ends of this exposure the white colour blends rather abruptly into the predominant yellow ochre, which seems to indicate that the iron stain is gradually contaminating the kaolin through the influence of percolating water. Samples of kaolin taken at equal distances in both directions from the centre of this exposure contain an equal amount of grit, in the form of very fine particles of free quartz. The richest parts of the kaolin contain about five per cent. of this grit. Samples from nearer the centre of the exposure contain a gradually increasing amount of grit, increasing both in quantity and in size of the particles, and at the centre the fractured quartz ledge is encountered, the interstices being filled with kaolin of the same fine quality.

Five of the other exposures of kaolin, which vary from 12 to 25 ft. in extent, exhibit characteristics identical with those of the larger exposure; the contact of the kaolin with the ochre being generally a gradual mingling of the two, the pure white kaolin is separated from the yellow ochre by a distance of three or four feet, or even less, through which the two are blending, though at some points a sharp contact line separates the two materials. The kaolin at the centre of each exposure contains a greater amount of grit than that nearer the extremities, the amount of grit decreasing as the distance from the quartz wall increases; and at no point is the interior of the mass of kaolin contaminated by any colouring matter.

The breast of the main drift is against the quartz wall, and the kaolin exposed before the quartz is reached is the same as at the other points, but the mingling of the kaolin with the quartz is more pronounced here, as the drift runs deeper into the quartz wall, and gives a better exposure. A branch drift was extended from here along the edge of the kaolin for a distance of 15 ft., then upward and back over the main drift to a height of 25 ft., the kaolin being traced throughout this distance without a break, and the top of the deposit was not reached.

A fresh specimen of the quartz wall shows innumerable small crystals of a light-coloured feldspar (probably orthoclase) scattered through it, while one taken from near the face of the wall is pitted with cavities from which the feldspar has been removed. The kaolin has been derived from the decomposition of this feldspar, under the influence of percolating water, to which the fractured condition of the quartz gives access. The water has transported the kaolin and the quartz fragments and deposited them along the face of the wall, sorting the material by depositing the coarser near the wall, and the fine kaolin, almost free from quartz, beyond the coarse material, thus producing the grading noticed at each of the exposures.

The thickness of the kaolin deposit is variable, but, judging from the exposures where the thickness can be estimated, it averages about 8 ft. The depth has never been ascertained (except that the uplift mentioned traced it for 25 ft. without reaching the limit), but it is considerable. The quartz wall can be traced for a considerable distance

on the surface by the low escarpment which it forms. A drift cut just in front of this escarpment at a distance of some 1,800 ft. from the mine, and about 100 ft. above the level of the kaolin exposures in the mine, also encountered kaolin of the same quality and associations.

The colour and quality of this kaolin are superior not only to the best American material, but to the imported paper clays as well, and the company will soon arrange to make a thorough investigation of the extent of the deposit.—*Engineering and Mining Journal*.

BRITISH CAPITAL AND RUSSIAN ENTERPRISES.

MR. CONSUL SMITH, in his latest report to the Foreign Office on the trade of Kieff, makes the following remarks:—Attention has often been drawn to the practical absence of British capital in the many developments of Russian enterprise. The metallurgical industry of Southern Russia may be said to be entirely in the hands of French and Belgian capitalists. Of the foreign companies registered in Russia 21 are French, with a capital of 140,000,000 francs (£5,600,000); 26 Belgian, with a capital of 100,000,000 (£4,000,000); eight German, with a capital of £2,840,000; while Britain is represented by three companies with £757,220 of capital. Nearly all the above capital is invested in coal mines, ironworks, locomotive and railway wagon shops, tramways, etc. The major portions of these undertakings have all been inaugurated within the last half-dozen years, and when one hears of large ironworks paying dividends ranging from 80 to 40 per cent., that £25 shares of these ironworks are worth £300, owing to the building of the Siberian Railway, that they have Government orders in hand for the next ten years at prices ensuring the same good dividends, one feels inclined to assume that for the average Briton with capital to invest Russia is a land beyond the pale of civilization instead of being from 60 to 72 hours' journey from London. The protective tariff of Russia has ousted, and is daily ousting, British coal, foreign rails, and innumerable articles of foreign manufacture; but there is "no duty" chargeable upon the introduction of foreign capital, more especially when such capital is to be employed for the development of the country's resources. It is no secret that the present Minister of Finance is most desirous to draw foreign capital into Russia; and it seems somewhat singular that the capitalists of Great Britain are practically unknown in the land. Only a few weeks ago one read the prospectus of a newly formed Belgian company, registered in Brussels with a capital of 25,000,000 fr., and the right to issue a further 25,000,000 fr. in bonds. This company has been formed to exploit commercial undertakings in Russia, principally connected with the coal and iron industries, and are reported to have already purchased several well-known mines and works in the neighbourhood of Ekaterinoslaw. It is more on the style of the American Trust Companies, and the founders are a strong syndicate of well-known financial men in Russia, France, Holland, Belgium, and Austria. As this syndicate is supposed to have been instituted more for the purpose of controlling and regulating the various undertakings already in operation, with the intention of keeping up the prices, it is not finding the fullest measure of sympathy in Russia. The metallurgical industry of Russia has more than ample room for further extension, and it will be many years to come before there will be any necessity for syndicates to control or regulate it. There is little good to be got by complaining of the falling off in our exports into Russia, seeing it is out of our power to compete against the existing high tariff; but there is sure to be a good return to those manufacturers who find their markets gradually diminishing, and who are prepared to start works in this country, as well as to the capitalist who is prepared to invest his money in the industries so rapidly developing in Russia. That the metallurgical industry of Russia has a great future before it there can be no doubt. In a Government report on this industry for 1895, it is stated that 1,412,047 tons of pig iron, 415,443 tons of wrought iron, and 557,155 tons of steel were produced. In pig iron there was an increased production over the preceding year of 112,903 tons, and the works in South Russia account for the largest proportion of this increase. Iron is yearly giving way to the production of steel. Still, notwithstanding the great strides which have been made in the iron industry by the establishment of huge works, the production of the country is still far below its requirements, for the same report mentions that in 1895 the quantity of pig iron, wrought iron, and steel imported into Russia amounted to 767,774 tons, or more than half of the production of the country; and 258,065 tons more than in 1893. Coal showed a production of 8,870,968 tons, an increase over 1894 of 354,839 tons. Salt showed a production of 1,524,193 tons, an increase over 1894 of 208,064 tons. These figures show that the Belgian and French capitalists are wise in their generation, and that their investments are far from being classed under those known as "risky."

NEW ZEALAND SULPHUR.—The high price of brimstone has led to the re-opening of the New Zealand deposits, and a good deal is now being shipped from them to Australian acid makers.

THE WORLD'S SUPPLY OF QUININE.

(Concluded from page 98.)

Java.—This island is now the chief source of production of quinine, and it is truly entitled to the position it holds, for its output last year had reached proportions that placed it nearly 100% in advance of the maximum production ever attained by any of the three other principal centres, while its position as compared with the present output of these centres was some five or six hundred per cent. better. Its claim, therefore, to being the chief centre, is undoubtedly superlative. It is a noteworthy feature that this island, contrary to the history of the other sources, never looked back after it had once fairly embarked on cinchona planting. To those who established the industry the first five years must have been trying and discouraging, for it took from 1881 to the end of 1885 for the production of quinine to rise to an annual total of a little under ten tons. From this date forward they began to reap their reward, for after an accentuated rate of increase in 1886, the production rose by leaps and bounds, often approximating to an advance of 40 tons in one year. From the end of 1885, when this rise first began, there is a striking parallel with the production in Ceylon, which was then approaching its maximum. By the end of 1888, however, Ceylon was fairly well advanced on the downward path, while Java, steadily rising, touched 127.4 tons by the close of 1890.

In 1891 and 1892 a lull ensued, in fact the rate of production was slower in 1892 than in any previous year in the history of Java. Early in 1893, however, a change for the better set in, and in this year and 1894 the increase in the rate of production was exactly comparable with the years 1889 and 1890.

The same characteristic progress resulted in 1895, until at the close of 1896 Java was supplying almost exactly 250 tons out of the world's total.

Concurrently with this phenomenal development, the supplies of the other four centres had fallen to below 19 tons annually, with the exception of British India, which totalled something well under 35 tons. It is not surprising, therefore, to learn that factories for the extraction of quinine from the bark are increasing.

Ceylon.—Though this centre is not, strictly speaking, entitled to rank second when judged according to its present output, it is nevertheless worthy of the honour, as in 1887 and 1888 it headed the world's supply, while its present day rival has never at any time approached within a hundred tons of this position. In fact, though starting on the same level, Ceylon had exceeded in 1884 the output that British India had struggled up to in 1894. Since that year they have both declined at the same rate.

The career of Ceylon as a cinchona producing country has been most erratic. In 1881 and 1883 it was making steady progress, but in the next two years it made such prodigious strides that it is not surprising the Java industry was practically neglected. In point of fact, Ceylon made an unparalleled advance in these two years, the production very nearly rising 78 tons during that period.

During the next three years there was a steady but less sensational advance until the maximum was reached in the opening months of 1888 with an output of 157 tons. From this date the production declined almost exactly at the same rate as it had risen during the years 1884 to 1888, so that by the close of 1891 it had fallen to 63.7 tons, or exactly the same as at the end of 1883. In the course of the next year there was a slight revival, amounting to a little over 10 tons on the year's output. The hopes thus raised were soon dispelled, for in 1893 there was a heavy falling off, and the output has never looked up since. It is noteworthy that the decline in the alternate years 1889, 1891, and 1893, was in almost the same proportion. In 1895 the falling off continued, until at the beginning of 1896 the annual output had come down to about 10 tons.

America.—During the last ten years the supplies of quinine from the wild cinchona of America have almost passed out of remembrance, yet, at the time this review dates back to, it was far and away the largest source of supply. But the days of its supremacy were numbered. In 1881, while as yet its rivals could scarcely be considered such, the output rose, reaching at the end of that year the total of 132.3 tons. Thenceforward there was a steady decline until the end of 1883, when a rapid falling off ensued, Ceylon gaining the ascendancy in 1884, and even Java outstripping it in 1887, at which time the latter centre was just breaking away from the period of semi-stagnation that characterised its opening years. In the same year the output fell to below 19 tons, and with the close of 1888 quinine had ceased to be produced from wild cinchona in America.

It is a remarkable fact that with this source of competition removed, Ceylon was the only producing centre that ceased to increase its output. A very good idea of the sudden decline of the American industry can be gathered from the fact that while in 1881 this country was supplying over 128 tons out of the world's total consumption of 137 tons, in 1886 it was only supplying 30 tons out of a total consumption of about 230 tons. It would seem, however, that the sudden downfall of this centre was the cause of the success of all the other smaller centres with the

exception of Ceylon, for with the latter (and Java) standing so far ahead in the world's supply, and now Java almost monopolising the supply, the small fry would not have had a chance with the extra competition of America. It will thus be seen that yet another exception has been made in taking this country as the next in order, but, as during the years in which it was a producing centre it was so far ahead of its latter-day victors, it is felt to be pardonable.

British India.—After the colossal developments of Java and Ceylon, the industry of this country is but a pigmy. From 1881 to the end of 1885 Java and British India kept fairly close together, though the latter managed to fall ten tons behind during that time, this figure representing the total output at the close of this year.

From then up to the end of 1888 the output barely stirred at all, for, while the world's consumption was steadily increasing, Java was forging ahead, and Ceylon had only just started on the downhill journey. In 1889 and 1891, however, there were marked rises, equal to about 20 tons in the year. The maximum was thus reached, at the end of 1891, with a total of 54 tons.

During 1892 and 1893 the production drooped, but it rose once again to the maximum just stated at the close of 1893. Since then there has been a decided but not too precipitate decline, until at the end of 1895 the output was about 34·3 tons, or the same as in 1889. It is notable that, with the exception of the years 1881 to 1884 inclusive, the development of this industry in British India has followed very closely the development of the world's supply, having risen and fallen in much the same proportions.

Bolivia, Africa, Tasmania, &c.—The records of these countries only date from 1885, at which time their conjoint output was something under five tons. By the end of the year it had risen to 10 tons, and then crept along up to 15 tons in the course of the next three years. By the close of 1889 it had amounted to nearly 25 tons. From this date up to the end of 1893 there is a striking resemblance between the rises and falls of these countries and British India, the two keeping pace almost to a ton—the accordance of the decline and subsequent rise in 1892 and 1893 being most remarkable. The maximum reached in 1893 was 46·5 tons, but in 1894 there was a very sudden decline to about 15 tons, while during 1895 the production once more showed a disposition to improve.

THE PRESENT POSITION.

In conclusion, it may be of interest to give the following summary, which is based on the outputs at the present time, that is to say, 1896, later than which reliable statistics are scarcely available. The centres are arranged strictly in the order of production:—

- | | |
|------------------------|------------------------|
| 1. Java..... | 3. Other Countries ... |
| 2. British India | 4. Ceylon |

Trade Notes.

SHORT TIME IN THE CHEMICAL TRADE.—Another large batch of shiftmen employed at the works of Messrs. Brunner, Mond and Co., Ltd., Winnington, Northwich, commenced on Saturday to work short time. The chemical industry is in an unsettled condition, and as the holidays end men are being reduced two and three days weekly.

DEATH UNDER CHLOROFORM.—Mr. Griffith Evans died this week while under the influence of chloroform at the London Temperance Hospital, to which he had gone for an operation on an abscess in his mouth. The Coroner remarked that it was the second inquest he had conducted within a week on persons who had died during an operation.

COALOWNERS AND THE COMPENSATION BILL.—Rumours have been very pronounced during the past few days as to the action of certain leading and wealthy coalowners of the Wigan district. The gossips say that about half-a-dozen of these gentlemen, who occupy very prominent positions, have sent in their formal resignations to the Ince Conservative Registration Association, declaring that from henceforth they will cease to have any connection with it. They state that they have taken this action as they threatened they would do when the Workmen's Compensation Bill was before the House of Commons, and they thus enter their protest against the action of the Government over this measure.

POISONED BY SPIRITS OF SALTS.—Mr. Sydney Smelt, the Manchester city coroner, held an inquest recently on the body of a Cumberland miner named Arthur Darcy Nixon, of Cleator Moor, whose death was attributed to drinking a quantity of spirits of salts in mistake for porter. The bottle containing the poison was standing beside several porter bottles, and the deceased having drunk the liquid, immediately screamed out, "Oh, my throat is burned." A doctor was called in, who attended him for several weeks, but the deceased was on August 14th removed to the Manchester Infirmary, where an operation was performed. He died on Friday week. After hearing the evidence of Mr. Ray, resident surgeon at the Infirmary, the jury found that death had been caused by poison, taken in mistake.

ELECTRIC MOTOR CABS.—On Tuesday the London Electrical Company placed an additional fifteen motor cabs upon the streets of the metropolis, and will continue to add three a week to the number running.

THE RESIN MARKET.—Low grades are a trifle easier, while "pales" have advanced a little. Little business, however, is passing, as consumers appear to be well stocked, and shippers are not anxious sellers. Receipts are falling off in Savannah and Wilmington, and stocks in the United States are not unusually large. The usual autumn advance of steamer rates would be favourable to higher prices. There has been considerable inquiry for low grades in the London market. The stock of all grades on public wharves at the beginning of the month was 13,620 barrels, as against 9,613 barrels at the corresponding date last year. In Liverpool "spot" prices continue unchanged. There have been some cheap steamer lots shipped thither lately, but all grades are now firmer for shipment.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols are unsettled at 1s. 11d. for 90's and 2s. 1d. for 50/90's. The rest of the tar products are quiet and unchanged. Carbolic acids are quiet, and remain as last quoted, while naphthas present no new feature. Anthracene is as flat as ever. Creosote is moving fairly well at full prices, but this is owing to the season. Pitch is lifeless at 17s. to 21s. 6d., f.o.b. East Coast.

Sulphate of ammonia is firm, with prices hardening. Makers, generally, are firm, while a volume of business is growing. Closing prices are: Hullton £7. 12s. 6d., London outside makes £7. 12s. 6d., Liverpool, Hull, and Leith £7. 12s. 6d., all prompt. Nitrate of soda quiet at 7s. 4½d. to 7s. 7½d. per cwt., according to quality.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali market the demand for all the main products is moderately active, and prices all round are well maintained. Caustic soda is unaltered at last week's quotations, viz:—F.o.b. Liverpool, 77%, £8. 15s.; 74%, £8. 70%; £7. 2s. 6d.; 60%, £6. 2s. 6d., nett, per ton. Bleaching powder in good demand, at £6. 7s. 6d., f.o.r., and £6. 10s. to £6. 12s. 6d., f.o.b., and there is an increased inquiry, both for caustic soda and bleach for 1898 delivery, but no business of any magnitude has yet been done. Ammonia alkali is steady at £3. 17s. 6d., bags, f.o.r. Chlorates are quiet and unchanged in values at 4d and 4¼d. for potash and soda respectively. Sulphate of copper is in moderate request and price firm at £16. 5s. to £16. 10s., f.o.b. Business has been done at the latter figure for autumn and spring delivery. Sulphur steady at £4. 12s. 6d., f.o.r. Salts cake in fairly good request at 19s. to 20s. White powdered arsenic has advanced owing to increased demand, and £22. 10s. to £22. 15s. is to-day's value. Nitrate of soda continues to offer at 7s. 6d. per cwt. Brown acetate of lime dearer at £5s. 2s. 6d., c.i.f. Other acetates quiet and without alteration in value. Lead salts firm. Yellow prussiate steady at 5½d. to 5¾d. per lb. Cyanide scarce for prompt delivery at 10¾d. per lb. Aniline oil and salt are unchanged. Carbolic acids quiet. Borax and boracic acid have a slightly easier tendency. Alum, £4. 11s. 6d., f.o.b. Green copperas in steady demand and price firm. Generally, the reports from various markets do not indicate any improvement in trade.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron easier. Scotch warrants closed at 44s. 3½d.; Middlesbrough, 40s. 6d. cash; and hematite, 46s. 11½d. Copper quiet: Chili bars, G.O.B.'s and G.M.B.'s, closed at £48. 11s. 3d. to £48. 16s. 3d. cash, and £48. 18s. 9d. to £49. 3s. 9d. three months. Tin steady: Straits closed at £61. 2s. 6d. to £61. 12s. 6d. cash, and £61. 12s. 6d. to £62. 2s. 6d. three months; Australian, £62. 5s. English ingots, £64. 10s. to £65. Lead firmer: Spanish, £12. 15s. English, £13. 2s. 6d. to £13. 5s. Silesian spelter, ordinary, £17. 2s. 6d. Nickel, 1s. 2½d. Antimony, £29. 10s. to £30. Quicksilver: First hands, £6. 17s. 6d.; second hands, £6. 16s. 6d. Copper shares quiet: Cape, 2½ to 2¾; Copiapo, 2 to 2½; Libiola, 2½ to 2¾; Mason and Barry, 2¾ to 3; Rio Tinto, 23 to 23½; Tharsis, 5½ to 6½.

GLASGOW, WEDNESDAY.—Market steady, and a moderate business. Scotch done at 44s. 3½d., 44s. 3d., and 44s. 3½d. cash; also at 44s.

5d. and 44s. 5½d., one month; buyers, 44s. 3½d. cash; sellers 44s. 4d. Cleveland done at 40s. 6d. cash; buyers, 40s. 6d. cash; sellers, ½d. more. Cumberland hematite done at 47s. twelve days and 47s. 2d. one month; buyers, 46s. 11¼d. cash; sellers, 47s. Middlesbrough hematite, buyers, 48s. 5d. cash; sellers, 48s. 9d.

REPORT ON MANURE MATERIAL.

Throughout the past week the market has shown signs of improvement for manure material in general, with a tendency towards better prices than have been ruling for some time. The quotation for 75/80% Florida rock (in cargoes) is still 5½d. per unit, but no actual transactions are reported, and owing to a firmer tone in the freight market, sellers are holding firm for their price. For South Carolina River and 58/63% Algerian rock 4¾d. per unit would no doubt still be accepted, in cargoes, c.i.f. to United Kingdom ports. There would be buyers of River Plate bones at £3. 12s. 6d. per ton, but in the absence of cargoes offering, no business is reported. For autumn shipment crushed Kurachee bones offer at £3. 15s. per ton, and £3. 12s. 6d. would probably be accepted for Bombay bone meal. The spot market for nitrate of soda is very quiet, but holders are firm—7s. 4½d. per cwt. for ordinary and 7s. 6¾d. to 7s. 9d. for good to refined quality being the quotation. In the forward position the market is firm, with an advance in prices all round. Business is reported to have been done for May-August sailings at 7s. 1½d. and for September-November sailings at 7s. 4½d. to 7s. 7d. per cwt. for ordinary quality, as in size and position, with a premium of 1½d. to 3d. extra for refined quality.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is firm, with a good business doing, about 300 tons having changed hands. Lagos, £21. 5s.; hard oils, £18. 2s. 6d.; Benin, £19.; and soft oils, £19. 5s. to arrive. The firm position of olive is maintained, with a good business at advancing prices. Linseed has risen another notch, and is now firm at 18s. to 18s. 6d. cwt. for Liverpool makes in export casks. Cottonseed also is dearer, Liverpool refined now being quoted 16s. 9d. to 17s. 6d. cwt. Castor oil firm to a degree, both for spot and to arrive; good seconds Calcutta is moving at 3½d. ex quay. Offerings of first pressure French have been cleared, and sellers now ask 3½d. per lb., the same value applying to Madras. Tallow presents no new feature. Resin is steady in all grades on the basis of common 4s 7½d. to 4s. 9d. cwt. Spirits of turpentine have settled down firm at 21s. 6d. cwt. Petroleum steady at 5¼d. to 7d. for American, and Russian refined 5¼d. per gallon.

CAKES.—All qualities are fetching more money. West American linseed £5. 17s. 6d. to £6. 2s. 6d. spot; Liverpool makes £7 to £7. 15s. Fair sales of choice American cottonseed (decorticated) have been made at £5. 12s. 6d. to £6., an advance of 2s. 6d. Liverpool makes in fairly good demand at £6. 5s. to £6. 15s. per ton. Liverpool undecorticated brisk at £4. 10 to £4. 5s. Egyptians moving nicely at £3. 17s. 6d. per ton.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire—common £10., medium £12., best £15.; Derbyshire—common 40s., medium 50s., best 60s.; Welsh—best 90s., seconds 50s., and common 18s.; Irish, Devonshire, 40s to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead: £16. Red lead unchanged. Venetian red: £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide: £22. 10s. to £25.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The question of paramount interest here to-day is the all-absorbing one of the sudden advance in wheat, which appears to have caught the trade napping. The advance has been as much as 6s. per quarter, and it is not unlikely to reach as much as 50s. per quarter; but the fact of it being maintained is another matter. The principal imports here against the same time a year ago have been:—Wheat, 1,456,152 qrs., against 1,787,491 qrs.; linseed, 407,335 qrs., against 477,269 qrs.; rapeseed, 56,689 qrs., against 71,247 qrs.; cottonseed, 127,458 tons, against 98,900 tons; oilcakes, 7,123 tons, against 8,607 tons; olive oil, 3,289 tons, against 4,274 tons. Linseed oil has advanced about 10s. per ton upon rates a week ago, but to-day is quiet at 16s. 3d. per cwt. spot naked, and same rates accepted to end of year; Jan.-April 16s. 9d. asked; boiled and refined £1. to £1. 10s. per ton extra. Refined cotton oil firm at 14s. 7½d. naked spot and to Oct.; forward, Nov.-April, 14s. 6d., at which business has been done; barrels £1. 10s., and ordinary casks £1. per ton extra. Olive oils remain unchanged, but firm; Candia £31. 10s., Malaga £31. 10s., and Corfu £31. per ton. Olive oil soaps, 62% fatty acids, £16. 10s. per ton. Oleines unchanged. Castor oil from 3½d. per lb. Cod oils, £16. to £18. per ton.

CAKES.—Linseed cakes quiet; 95% pure, £6. 17s. 6d. to £7. per ton. Russians, £6. 12s. 6d. to £6. 15s. Oilcakes, £5. 17s. 6d. to £6. Cotton cakes steady; best makes £4 to £4. 2s. 6d.; the same for Nov.-April; seconds 2s. 6d. per ton less. Rape cakes: Black Sea £3 17s. 6d. to £4. 5s., but prices nominal in the absence of supplies.

PAINTS.—Makers, in summarising the season's results, are not so satisfied; at no time have they experienced the same pressure of business as previous years. Dry mineral colours from £4. to £7. 10s. Barytes, 40s. to 60s. per ton, in bags. Ready mixed paints, £23. per ton. Paint remover, 25s. to 30s. per cwt. Imperial black varnish, £5. 10s. per ton. Oak varnish, 5s. 6d. per gallon. Ordinary colours in oil, from £10. per ton.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

All shale products are now left to find their own levels as best they may, the last shred of agreement between the Scotch producers having disappeared. Prices of burning oil and of scale and wax, as given below, are those held out for by the best makers, but there is *sub rosa* dealing going on at even smaller figures. Lubricating oils and naphtha are healthier, and the figures here given are the actual ones. Sulphate of ammonia has had some little access of strength for prompt business. To-day it would be hardly possible to buy at £7. 10s., and the mark must be put at from £7. 10s. to £7. 12s. 6d. prompt, f.o.b. Leith. Forward dealing still a blank. Sulphate of copper has been firm, but more recently showing signs of giving a little. In general chemicals there is still a moderate amount of business passing, without any changes of price. The calico printing industry here is suffering a crisis owing to low prices, and diminished volume of orders going. Two large firms are *in extremis*, but one of them may pull through for the time.

Chief prices current are:—Soda crystals, £2. 12s. 6d., nett, Tyne, soda ash, 48/62°, £4. 2s. 6d. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £5. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8., 70/72° £7. 2s. 6d., 60/62° £6. 2s. 6d., and cream 60/62° £6., all nett, Liverpool; bleaching powder, 35/37°, £6. 10s. nett, Tyne; saltcake, 19s. to 20s.; borax, English, refined, £14. 15s. and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4d. less 5%, any port; nitrate of soda, 7s. 4½d. to 7s. 9d.; sulphate of ammonia, £7. 10s. to £7. 12s. 6d., prompt, f.o.b. Leith; sal ammoniac, first and second white, £33. and £31. nett any port; sulphate of copper, £16. to £16. 5s., less 5% Liverpool; paraffin scale, hard, 1¼d. to 1½d., and soft, 1½d. per lb.; paraffin wax, 120° semi-refined, 1¾d. to 2d. per lb.; paraffin spirit (naphtha), 6d. per gallon; paraffin oil (burning), No. 1, 5¾d., and crystal, 6d., at Glasgow and other big centres, for Scotch buyers (English sales ½d. to ¾d. lower); ditto (lubricating) 865° £5. to £5. 5s., 885° £5. 15s. to £6. 5s., and 890/895° £6. 10s. to £7. Week's imports of sugar at Greenock were 1,775 bags beet refined, 27,100 bags beet unrefined, and 100 cases cane.

TYNE CHEMICAL REPORT.

TUESDAY.

There is no change to report either in price or position. Business recently has been only quiet, and a better trade is anticipated with the autumn months.

Soda crystals are scarce at £2. 12s. 6d. per ton, gross weight, locally; caustic soda, 76/77% £9., and 70% £7. 10s. per ton; sulphur, £5. per ton; bleaching powder, softs, £6. 10s. per ton, nett; hards, £6. 15s. per ton, nett; caustic soda, 76/77%, £9. per ton, nett; do., 70%, £7. 10s. per ton, nett; recovered sulphur, 2 cwt. bags, £5. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. 6d. per ton, nett; do., 52%, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95% crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham salt remains steady at 9s. to 9s. 3d. per ton, f.o.b. Tees. A fair business taking place.

COALS.—Trade continues very good, with an excellent demand for export. Prices all round are firmer. Coke in strong demand and scarce for immediate delivery. Best Northumberland steam, 8s 9d. to 9s. 3d. per ton; second qualities, 7s. 9d. to 8s. 3d. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; gas coals, 7s. 3d. to 7s. 6d. per ton; bunker coals, 7s. 6d. to 7s. 9d. per ton; coke, 21s. to 22s. per ton.

New Companies.

Tinker and Holliday, Ltd.—CAPITAL £5,100. in £10. shares. This company has been formed to utilise spare or waste heat generated by coke ovens, belonging to Tinker Bros., Ltd., or others. Registered office, Cambridge-buildings, Upper Row, Huddersfield.

Anglo-Austrian Petroleum Co., Ltd.—CAPITAL £125,000. in £1 shares. This company has been formed to adopt an agreement with the Anglo-Continental Syndicate, Limited, and to produce, refine, store, supply, and distribute petroleum and petroleum products. The subscribers to the memorandum of association are:—A. W. Bery, 22, Austin Friars, E.C., secretary; J. Law, 36, Palace-street, Buckingham Gate, S.W., clerk; E. Pears, Roslyn, Hitherfield-road, Streatham, secretary; N. Volckman, Elm-road, Beckenham, Kent, clerk; A. J. Swan, 20 Fenwick-road, E. Dulwich, S.E., gentleman; W. Farrier, 16, High-street, Homerton, N.E., clerk; E. T. Church, 41, Copleston-road, Denmark Park, S.E., clerk.

J. Cullen and Co., Ltd.—CAPITAL £10,000. in £10. shares. This company has been formed to acquire the business carried on by J. Cullen and Co., of Sheffield, to enter into a certain agreement, and to manufacture, sell, and deal in glass, paints, oils, colours, lead piping, wallpaper, etc. The subscribers to the memorandum of association are:—J. Cullen, 24, Clarke-square, Sheffield, glass merchant; Mrs. J. Cullen, 24, Clarke-square, Sheffield; C. H. Burwell, 48, Woodstock-road, Sheffield, glass merchant; Mrs. C. H. Burwell, 48, Woodstock-road, Sheffield; W. F. Smith, 16, Camps-lane, Sheffield, solicitor; W. Robinson, Sunningfield-road, Hendon, N.W., manufacturer; Mrs. W. Robinson, Sunningfield-road, Hendon, N.W. Registered office, 115a, Carver-street, Sheffield.

Wendler Brothers, Ltd.—CAPITAL £12,000. in £10. shares. This company has been formed to acquire and carry on the business of chemical manufacturers, carried on by E. Wendler and G. Wendler, at 34, Green-lane, Princess-street, Manchester, as Wendler Bros., and Provisional Specification No. 10,933 of May 3rd, 1897, and to enter into a certain agreement. The subscribers to the memorandum of association are:—A. Baumann, 18, Tib-lane, Manchester, merchant; H. Houltastworth, Bollam Mills, Retford, Notts, merchant; G. Wendler, 55, Nelson-street, Manchester, manufacturer; J. Bauer, 21, Chorlton-street, Manchester, merchant; E. Wendler, 55, Nelson-street, Manchester, manufacturer; E. Wihl, 17, Nicholas-street, Manchester, shipper; O. M. Wihl, 34, Kennedy-street, Manchester, barrister.

IMPORTS OF CHEMICAL PRODUCTS

AT
THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending August 14th

Acetic Acid—
Germany, 70 pks. Beresford & Co.
Holland, 136 A. & M. Zimmermann
" 10 F. Stahlschmidt & Co.

Acetone—
Germany, 4 cks. Matthews & Luff

Alkali—
France, 20 c. J. Barber & Co.
Canada, 160 "

Alum—
Holland, 542 pks. Ohlenschlager Bros

Ammonia—
Belgium, 6 drs. D. C. Thomas & Sons

Antimony Ore—
Portugal, 50 t. J. Bamber

Arsenic—
Melbourne, 15 cks. Welch Perrin & Co.
" 25 C. H. Adams & Co.

Asbestos—
Italy, £10 T. Boorn
Canada, 2,000 J. Owen
Germany, 50 Craven & Co.

Barytes—
Belgium, 198 cks. 37 brls. W. Harrison
" 84 Leach & Co.
" 56 W. Harrison & Co.

Barytes—
Holland, 273 200 bgs.
Belgium, 84 118 pks. Burrell & Co.
" 84 O'Hara & Hoar
" 95 Spiess Bros. & Co.
" 95 J. L. Lyon & Co.
" 94 bgs. W. H. Carey & Sons

Bleaching Powder—
Holland, 50 cks. J. M. Steel & Co.

Camphor—
Germany, 2 cs. T. H. Lee

Caoutchouc—
Singapore, 26 c. Ekan & Co.
Zanzibar, 13 L. & I. D. Jt. Co.
" 10 Rogers Bros.
" 98 Anderson, Weber & Co.

Caoutchouc—
Penang, 83 Butler's Wf. Id.
Germany, 230 Prop. Bull Wf.
Rangoon, 61 L. & I. D. Jt. Co.
" 261 E. Boustead
Singapore, 151 L. & I. D. Jt. Co.
Holland, 1 A. G. Robinson & Co.
Natal, 29 Brookes & Green
" 30 Hale & Son
Rangoon, 23 Prop. Hay's Wf.

Castor Oil—
Italy, 30 Stebbing & Co.

Caustic Potash—
Germany, 40 drs. J. M. Steel & Co.

Chemicals (otherwise undescribed)—
Sweden, £25 M. D. Co.
Germany, 131 L. & I. D. Jt. Co.
" 6 Phillips & Graves
Holland, 112 J. Barber & Co.
" 25 R. W. Greeff & Co.
" 60 G. Rahn & Co.
" 266 T. H. Lee

Chemicals—
Germany, 52 A. & M. Zimmermann
" 1,043 Mory & Co.
France, 42 R. Greening
Norway, 210 T. Palmer
Belgium, 7 H. Lambert
Germany, 78 E. Sedgwick & Co.
N. Russia, 20 Forbes, Abbott & Co.
Germany, 15 cks. Fleming's Oil & Chemical Co.

Chemicals—
" 17 Fleming's Oil & Chemical Co.

Cream of Tartar—
France, 13 cks. B & F. Wf. Co.
Holland, 21 Kirkpatrick & Co.
France, 10 W. C. Bacon & Co.

Dextrine—
Sweden, 25 bgs. M. D. Co.
Germany, 100 Hernu, Peron & Co.
" 100 H. Lorenz
" 10 M. D. Co.

Dyestuffs—
Belgium, 7 pks. 4 cs. W. Gerson & Co.

Argols—
Italy, 41 cks. Thames S. T. & L. Co., Ltd.

Cutch—
Singapore, 200 bxs. E. David & Co.
A. Turkey, 549 J. Swire & Sons
Rangoon, 400 Vokins & Co.
" 400 Leach & Co.

Extracts—
Germany, 2 cs. Fuerst Bros.
U. States, 20 pks. W. C. Barnes & Co.

Germany—
Austria, 200 brls. J. & R. Grant
France, 400 cks. L. J. Levinstein & Sons

Germany—
" 25 B & F. Wf. Co.
Germany, 1 T. H. Lee

Gantier—
Singapore, 191 bgs. Brinkmann & Co.
" 982 S. Barrow & Bro.
" 3,306 bls. Adamson, Gilfillan & Co.

Gantier—
" 392 W. Balchin
" 310 Brown & Elmslie
" 1,238 pks. Beresford & Co.
Germany, 252 bls. L. & I. D. Jt. Co.
Singapore, 534 P. & C. Co.

Gantier—
" 336 bgs. J. Greig
" 230 bls. J. Swire & Sons
" 490 L. & I. D. Jt. Co.

Indigo—
E. Indies, 12 cts. L. & I. D. Jt. Co.
" 16 Arbutnot Latham & Co.

Logwood—
Brazil, 90 t. Skelton & Schofield

Orchella—
Canaries, 1 bg. G. S. Bruce

Shumac—
Italy, 125 pks. A. Slater & Co.
" 100 bgs. H. Johnson & Sons

Shumac—
" 700 Beresford & Co.
" 300 J. E. Scott
" 2,000 Bevington & Sons
" 1,045 50 bls. Bailey & Leatham
" 1,000 C. S. Lovell

Tannery's Bark—
Natal, 85 t. J. T. Rennie, Son & Co.

Tannery's Bark—
Germany, 1 Flack, Chandler & Co.
U. States, 1 Wright, Layman & Co.
Natal, 25 Boutcher, Mortimore & Co.

Valonia—
A. Turkey, 10 t. M. D. Co.

Parina—
Belgium, 40 bgs. T. H. Lee
Germany, 150 J. Barber & Co.
" 200 R. Bennett & Co.
Holland, 159 J. Barber & Co.
" 100 G. Hornzee
" 100 Dunlop Bros. & Co.
France, 75 T. H. Lee
Holland, 100 J. Knill & Co.
" 50 C. Tennant, Sons & Co.

Glucose—
U. States, 50 pks. 300 c. Page, Son, & East
" 4750 4750 Pearce, Pelly & Co.
" 100 617 C. Southwell & Co.

Glucose—
" 130 825 T. M. Duche & Sons
" 500 500 L. & I. D. Jt. Co.

Glucose—
" 50 273 H. Johnson & Sons
Germany, 25 207 R. G. Hall & Co.

Glucose—
Canada, 500 500 M. D. Co.
" 179 395 J. Kitchen, Ltd.

Glucose—
" 750 720 L. Norman & Co.

Glucose—
France, 400 400 T. J. Lipton
U. States, 100 620 E. & T. Pink
" 300 E. & T. Pink

Glucose—
France, £106 Bu. nett Bros. & Sons
Russia, 207 W. Balchin & Co.
U. States, 49 Armour & Co.
Austria, 250 L. & N.W. Railway

Germany, 200 L. & I. D. Jt. Co.
France, 49 Mory & Co.
Russia, N., 270 M. H. Voss

Germany, 24 Philipps & Graves
Belgium, 258 J. Barber & Co.
France, 35 W. J. W. Child & Co.
" 200 Prop. Hay's Wf.

Sweden, 303 Beronius, King, & Co.
U. States, 24 W. Wingate & Co.
France, 90 J. Harrison

Iron Oxide—
Holland, 37 t. W. Hawkins & Co.

Lamp Black—
U. States, 30 bds. J. Melvin
" 100 brls. M. Ashby, Ltd.
" 150 L. & I. D. Jt. Co.

Manganese Ore—
Straits, 55 t. Borneo Co.

Manure—
Germany, 50 t. F. W. Berk & Co.

Manure—
E. Indies, 25 A. Hunter & Co.

Methyl Alcohol—
Holland, 24 dms. Domeier & Co.

Mica—
E. Indies, £1050 W. M. Smith & Sons
Norway, 20 "
U. States, 210 "

Mineral White—
Austria, 100 bgs. Stones, Wilson & Co.

Molasses—
U. States, 751 pks. 4,694 c. J. R. Francis & Co.

Naphtha—
Germany, 7 dms. Sutton, Carden & Co.

Ochre—
Holland, 41 pks. Philipps & Graves
U. States, 70 Page, Son, & East

Phosphorus—
Holland, 10 c. M. Ashby, Ltd.

Pitch—
N. Russia, 300 brls. Linck, Moeller, & Co.

Pitch—
Belgium, 5 Poth. Hille, & Co.
France, 43 H. Hill & Sons
Belgium, 20 H. Hunt

Plumbago—
Germany, 12 cks. H. Lambert
" 5 Brown & Elmslie
Ceylon, 92 G. R. Haller
" 12 Marshall & French
" 654 J. Thredder, Son, & Co.

Potassium Bisulphide—
Germany, 20 kgs. R. W. Greeff & Co.

Potassium Carbonate—
Germany, 100 c. Petri Bros.
France, 40 J. A. Reid

Potassium Oxymuriate — Sweden, 100 kgs. G. Boor & Co.	
Potassium Sulphate — Belgium, 50 bgs. Charles & Fox	
Rosin — France, 10 brls. Flageolet & Co. " 13 F. & S. Chiesman & Co. U States, 1,000 J. Knight & Sons " 2,950 T. Nickels & Co. " 1,993 Moore & Hole " 1,300 E. Cook & Co.	
Saltpetre — Germany, 8 cks. T. H. Lee " 12 L. & I. D. Jt. Co. E. Indies, 663 bgs. Lucas & Spencer's Wf Germany, 21 cks. J. Hall & Son " 70 S. E. Railway Co.	
Sodium Prussiate — Belgium, 76 cks. Blagden, Waugh, & Co.	
Starch — Germany, 80 cs. Philipps & Graves Holland, 1,641 Little & Johnston France, 100 T. M. Ducho & Sons U. States, 16 pks. L. & I. D. Jt. Co. Belgium, 116 cs. Leach & Co. Germany, 40 L. & I. D. Jt. Co. Holland, 590 A. Starck " 120 Philipps & Graves Belgium, 200 Taylor Bros. " 40 C. Tennant, Sons, & Co. U. States, 250 sks. R. Bennett & Co. Germany, 6 cks. T. H. Lee Belgium, 1,128 cs. F. Claydon & Co. " 255 E. & T. Pink " 40 T. H. Lee " 60 J. Harrison " 40 Pronk, Davis, & Co. U. States, 120 bxs. Beck & Pollitzer " 200 bgs. Bertel Food Co. " 200 pks. C. Tennant, Sons, & Co. Holland, 40 cs. G. Rahn & Co. Germany, 100 20 bgs. Seaward Bros.	
Stearine — U. States, 2 cks. L. & I. D. Jt. Co. N. Zealand, 57 J. Greaves Holland, 26 bls. J. Owen Belgium, 125 bgs. H. Hill & Sons	
Sulphur — Italy, 450 t. W. C. Bacon & Co. " 144 Bailey & Leatham, I. d. " 100 G. Boor & Co. " 10 F. Smith " 110 Soundy & Sons " 7 Tuson's Disinfecting Co.	
Sulphuric Acid — Germany, 3 pks. Fleming's Oil & Chemical Co.	
Talc — France, £80 Blackwell & Co.	
Tar — N. Russia, 1,860 brls. Linck, Moeller, & Co. " 373 Dussek Bros. & Co.	
Tartaric Acid — Holland, 10 pks. B. & F. Wf Co. " 8 Kirkpatrick & Co. " 6 cks. Domeier & Co. " 6 2 F. C. Devon & Co.	
Ultramarine — Holland, 6 cs. Hernu, Peron, & Co. Belgium, 3 Leach & Co. Germany, 20 Steinhoff, Sons, & Co. Holland, 10 pks. J. Barber & Co. " 8 Philipps & Graves	
Yarnish — U. States, 61 pks. Taylor Bros. Belgium, 1 W. Gerson & Co. U. States, 1 L. & I. D. Jt. Co. " 5 Lunham & Moore	
Verdigris — France, 4 cks. B. & F. Wf Co.	
White Lead — Belgium, 25 cks. Burrell & Co. Holland, 70 W. Balchin, I. d. Germany, 19 F. G. Clifford " 19 N. J. Fenner & Co. " 18 W. A. Rose & Co. Belgium, 18 Perkins & Homer	
Wood Pulp — Norway, 750 pks. London Paper Mill Co. " 2,071 E. J. & W. Goldsmith Sweden, 80 Hummel & Co. U. States, 1,441 W. D. Cork & Co.	

Sweden, 700 Henderson, Craig, & Co.	
" 800 London Paper Mill Co.	
" 272 C. S. Lovell	
Sweden, 800 W. E. Bott & Co.	
Germany, 400 Christophersen, Andrews, & Co.	
U States, 135 E. J. & W. Goldsmith	
Norway, 1,600 J. Sharp	
" 2,250 Johansen & Jorgensen	
Germany, 1,300 Horne & Co.	
" 57 Hernu, Peron & Co.	
" 100 H. Johnson & Sons	
Portugal, 500 Caima Wood Co.	
Norway, 218 McDougall & Bonthron	
U. States, 4 L. & I. D. Jt. Co.	
Zinc Oxide — U. States, 200 brls. M. Ashby, I. d.	
Holland, 51 J. Matton	
" 50 cks. Spies Bros. & Co.	
Germany, 125 W. Balchin, I. d.	
" 50 brls. M. D. Co.	
" 10 cks. M. D. Co.	

LIVERPOOL.

Week ending August 12th.

Alumina Hydrate — Antwerp, 8 cks. J. T. Fletcher & Co.	
Antimony Ore — Constantinople, 45 t.	
Barytes — Rotterdam, 21 cks.	
Bone Ash — Zarate, 153,560 kilos.	
Caoutchouc — Havre, 90 cs. Cunard S. S. Co., I. d.	
Cod Oil — St. Nazaire, 20 cks. St. John's, 81 J. J. Langley " 90 Job Bros. " 230 C. T. Bowring & Co.	
Colours — Antwerp, 26 cks. J. T. Fletcher & Co. Ghent, 21 brls. Rotterdam, 92 cks.	
Cream of Tartar — Bordeaux, 4 cks.	
Dyestuffs — Argois Bordeaux, 6 cks. Oporto, 29 Cochineal Teneriffe, 3 bgs. Canary Islands Trading Co. Gd. Canary, 30 Kennedy & Moon Rio Hacha, 184 t. 200 bgs. Extracts New York, 21 bxs. 85 cks. 39 pks.	
Myrabolams — Antwerp, 1 pk.	
Glucose — Boston, 750 brls. Newport News, 100	
Glue — Rouen, 40 bgs. Rotterdam, 7 cks. 24 bgs. 5 cs.	
Ochre — Rouen, 16 cks.	
Paint — Boston, 10 cs.	
Paraffin Scale — New York, 690 brls. Anglo-Am. Oil Co. I. d.	
Phosphate — Ghent, 4,076 bgs.	
Phosphate Rock — New York, 6 cks. Pickford & Winkfield	
Potash — Montreal, 18 brls. J. N. Royse & Co.	
Pyrites — Huelva, 4,651 t. Matheson & Co.	
Rosin — Savannah, 4,000 brls. Brunswick, 4,010 Ga., 2,970 Wilmington, 750	
Rosin Oil — Rotterdam, 25 cks.	
Salt — Madeira, 64 bgs.	

Soap — New York, 1 cs. Stocks & Co. Rotterdam, 2 cs. Boston, 22	
Starch — New York, 400 cks. Boston, 400 bgs. A. O. Probo & Co.	
" 798 Baltimore, 1,500 Antwerp, 40 cs. Rotterdam, 40 Newport News, 100 bgs.	
Tallow — Las Palmas, 100 pps. London & Brazilian Bank Boston, 156 tcs. 120 brls. Louis Gellis Didot " 600 cks.	
Tar — Archangel, 2,474 brls. B. Miller & Co. Wilmington, 1,100	
Tartaric Acid — Hamburg, 2 cks. Rotterdam, 8	
Treacle — Boston, 800 brls.	
Varnish — New York, 22 brls. L. & N. W. Railway Co. " 20 W. A. Warren	
Waste Salt — Hamburg, 240 t. 102 bgs.	
Wood Pulp — Gothenburg, 1,540 bls. New York, 222 rolls H. Tyrer & Co. " 425 pks. Christie & Co. " 600 bls. A. Rice & Co. " 92 13 pks.	
Zinc Oxide — Antwerp, 35 brls.	

MANCHESTER

Week ending August 14th.

Acetic Acid — Rotterdam, 10 blns.	
Alizarine — Rotterdam, 4 cks.	
Aluminous Cake — Rotterdam, 9 cks.	
Annatto — Bordeaux, 6 cks.	
Barytes — Rotterdam, 100 bgs.	
Beta-Naphthol — Rotterdam, 4 cks.	
Caustic Potash — Rotterdam, 8 cs.	
Chemicals (otherwise undes.) — Rotterdam, 6 cks.	
Colours — Rotterdam, 24 bxs. 86 brls. Boulogne, 1 ck. 2 pks. Ghent, 2 brls.	
Farina — Stettin, 244 bgs. Browne, Geveke, & Co.	
" 500 Hamburg, 100	
French Chalk — Boulogne, 2 cs.	
Glucose — Stettin, 1,000 bgs. Rotterdam, 4 cks.	
Glue — Rotterdam, { 30 bgs. Antwerp, 6 cks. Hamburg, 12 bls. " 10 bsks.	
Limestone — Antwerp, 2 crts. J. T. Fletcher & Co.	
" 3	
Litharge — Rotterdam, 12 cks.	
Mineral White — Bordeaux, 200 bgs.	
Oxalic Acid — Rotterdam, 12 cks.	
Phosphate — Rotterdam, 1 cs.	
Pitch — Rotterdam, 19 cks.	

Antwerp, 75	
Bordeaux, 100	
Hamburg, 58	
Potassium Chloride — Hamburg, 50 bgs.	
Soap — Boulogne, 2 cs. Bordeaux, 8	
Sodium Nitrate — Rotterdam, 4 cks.	
Starch — Rotterdam, 244 cs.	
Tar Oil — Antwerp, 21 cks. J. T. Fletcher & Co.	
Tartar — Bordeaux, 1 ck.	
Tartaric Acid — Rotterdam, 19 cks. Bordeaux, 2	
Waste Salt — Hamburg, 200 t. W. Pochin & Co. qty.	
Wood Pulp — Hamburg, 170 bls.	
Zinc Oxide — Rotterdam, 25 brls. Antwerp, 50	
Zinc White — Rotterdam, 5 cks.	

HULL.

Week ending August 14th.

Acids — Bari, 25 pks. Wilson Sons, & Co., I. d.	
Alizarine — Rotterdam, 37 pks. W. & C. L. Ringrose	
Alum — Riga, 90 cks. Wilson Sons, & Co., I. d.	
Ammonia — Copenhagen, 6 cs. Wilson Sons, & Co., I. d.	
Barytes — Antwerp, 57 pks. Bailey & Leatham, I. d. Amsterdam, 22 cks. Hutchinson & Son Ghent, 37	
Castor Oil — Venice, 25 cs. Wilson Sons, & Co., I. d.	
Chemicals (otherwise undescribed) — Hamburg, 3 cks. Wilson " 7 pks. Sons, & Co., I. d.	
Cod Oil — Drontheim, 10 brls. Wilson Sons, & Co., I. d.	
Colours — Christiania, 4 cks. Wilson Sons, & Co., I. d. Antwerp, 1 Smithson, & Co. Riga, 224 Wilson Sons, & Co., I. d. Bremen, 3 cs. J. Pyefinch & Co. " 8 cks. A. Sanderson & Co. " 6 J. & T. Seddon Dunkirk, 17 Wilson Sons, & Co., I. d. Antwerp, 3 cs. Wilson Sons, & Co., I. d. Rotterdam, 15 pks. 5 cks. W. & C. L. Ringrose " 93 13 cs.	
Cryolite — Copenhagen, qty. Wilson Sons, & Co., I. d.	
Farina — Harlingen, 175 bgs. W. & C. L. Ringrose Stettin, 353 Wilson Sons, & Co., I. d.	
Glucose — New York, 2 brls.	
Glue — Rouen, 26 bls. Rawson & Robinson Antwerp, 1 brl. Bailey & Leatham, I. d. Fiume, 100 bls. Wilson Sons, & Co., I. d. Bremen, 1 cs. W. Moran & Co. Dunkirk, 20 cks. Wilson Sons, & Co., I. d.	

Kaolin — Rotterdam, 243 bgs. W. & C. L. Ringrose	Tar — Archangel, 1,285 brls.	Phosphate — Rotterdam, 1 cs. J. Rankine & Son	Starch — Rotterdam, 194 cs. Tyne S. S. Co.
Lead Acetate — Stettin, 29 cks. Wilson, Sons, & Co., Ld.	Tartaric Acid — Rotterdam, 10 cks. W. & C. L. Ringrose	Potash — Rotterdam, 93 cks. J. Rankine & Son	Tar — Archangel, 1,617 brls.
Lithopone — Stettin, 2 cks. Wilson, Sons, & Co., Ld.	Treacle — New York, qty. Wilson, Sons, & Co., Ld.	Rosin — New York, 1,850 brls.	White Lead — Rotterdam, 1 ck. Tyne S. S. Co.
Logwood — Hamburg, 26 " "	Trieste , 2 cs. " "	Starch — Rotterdam, 48 cs. J. Rankine & Son	Wood Pulp — Rotterdam, 125 bls. Tyne S. S. Co.
Minium — Rotterdam, 10 cks. Hutchinson & Son	Yarnish — Stettin, 7 cks. Wilson, Sons, & Co., Ld.	Amsterdam , 950 bxs. J. Rankine & Son	Zinc Oxide — Antwerp, 15 brls. Tyne S. S. Co.
Ochre — Rouen, 88 cks. Rawson & Robinson	White Lead — Rotterdam, 29 cks. W. & C. L. Ringrose	Tallow — Philadelphia, 75 tcs. New York, 30	Zinc Sulphate — Gothenburg, 50 bgs.
Oxalic Acid — Hamburg, 2 cks.	Antwerp , 22 Leatham, Ld.	Tartar — Bordeaux, 7 cks. Oporto, 2	
Paint — Drontheim, 43 kgs. Wilson, Sons, & Co., Ld.	Wood Pulp — Stockholm, 10 pks. W. Shipstone & Co.	Treacle — Boston, 250 brls. Philadelphia, 800 New York, 300	GOOLE.
Phosphate — Antwerp, 20 bgs. Dunkirk, 2,460	Zinc White — Rotterdam, 10 cks. Hutchinson & Son	Ultramarine — Rotterdam, 6 cks. J. Rankine & Son	<i>Week ending August 11th.</i>
Phosphate Rock — Bona, 2,200 t.		Varnish — New York, 31 brls.	Acetic Acid — Rotterdam, 2 cs. 20 crbys.
Pitch — Rotterdam, 31 cks. Hutchinson & Son	GLASGOW.	Waste Salt — Hamburg, 345 t. 257 cks.	Alizarine — Rotterdam, 173 cks. 2 cs.
Archangel , 400 cs.	<i>Week ending August 19th.</i>	White Lead — Rotterdam, 53 pks. 11 cks. J. Rankine & Son	Alum — Rotterdam, 10 cks.
Potash — Dunkirk, 8 dms. Wilson, Sons, & Co., Ld.	Ammonia Salt — Rotterdam, 15 cks. J. Rankine & Son	Wood Pulp — Oporto, 250 bls. Christiania, 10 cs. 160 bls	Aniline — Rotterdam, 290 cks. 95 cs.
Pumice Stone — Messina, 261 pks. Wilson, Sons, & Co., Ld.	Asbestos — Montreal, 3 bgs.	Zinc Oxide — New York, 100 brls. Rotterdam, 25 cks. J. Rankine & Son	Colours — Hamburg, 30 cks. 3 cs.
" , 60 bgs.	Barytes — Rotterdam, 162 cks. J. Rankine & Son	Zinc White — Rotterdam, 80 cks. J. Rankine & Son	Dyestuffs (otherwise undescribed) Boulogne, 3 cks. 1 cs. 69 pks.
Pyrites — Huelva, 500 t.	Castor Oil — Antwerp, 11 cks.		Farina — Hamburg, 50 bgs. Harlingen, 150
Saltpetre — Rotterdam, 4 cks. Hutchinson & Son	Chemicals (otherwise undescribed) Hamburg, 3 cs.		Indigo — Rotterdam, 2 cks. 6 brls.
" , 10 kgs. Wilson, Sons, & Co., Ld.	Colours — Rotterdam, 186 pks. 1 cs. J. Rankine & Son		Madder — Rotterdam, 1 ck.
Shumac — Trieste, 6 brls. Wilson, Sons, & Co., Ld.	Dyestuffs — Alizarine Rotterdam, 108 cks. J. Rankine & Son		Potash — Dunkirk, 21 cks. 60 drs.
" , 12 bgs. Wilson, Sons, & Co., Ld.	Aniline — Rotterdam, 2 cks. J. Rankine & Son		Saltpetre — Rotterdam, 200 bgs. Hamburg, 2 cks.
Palermo , 210	Indigo — Rotterdam, 8 cts. J. Rankine & Son		Soda — Hamburg, 1 ck.
" , 2,000	Glucose — New York, 350 brls. Boston, 600		Varnish — Amsterdam, 2 cs.
Soap — Ba, 22 cs. Wilson, Sons, & Co., Ld.	Glue — New York, 98 brls. Rouen, 5 cks. Hamburg, 80 bgs.		Waste Salt — Hamburg, 204 cks. 20 t.
" , 40	Gypsum — Rouen, 400 bgs.		
Molfetta , 380	Litharge — Rotterdam, 11 cks. J. Rankine & Son		
Soda — Antwerp, 1 brl. Bailey & Leatham, Ld.	Ochre — Baltimore, 224 brls. Rouen, 66 cks.		
" , 130 bgs. Wilson, Sons, & Co., Ld.	Oxalic Acid — Rotterdam, 6 cks. J. Rankine & Son		
Starch — Amsterdam, 100 cs. W. & C. L. Ringrose	Paint — Philadelphia, 15 brls. New York, 89 pks.		
" , 306 Hutchinson & Son	Paraffin Scale — Philadelphia, 275 brls.		
Bremen , 4,045 Veltmann & Co.			
Antwerp , 80 Wilson, Sons, & Co., Ld.			
Stearine — Rotterdam, 13 bls. Hutchinson & Son			
" , 56 bgs. Wilson, Sons, & Co., Ld.			
Sulphur — Catania, 470 pks. Wilson, Sons, & Co., Ld.			
" , 667 90 t.			
Tallow — Dunkirk, 129 cks. Wilson, Sons, & Co., Ld.			

EXPORTS OF CHEMICAL PRODUCTS

OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending August 18th.

Alkali — Sydney, 8 c. £6	Ammonium Carbonate — Adelaide, 6 c. £11	Ammonium Chloride — Melbourne, 12 cks. £105	Ammonium Sulphate — Paris, 10 t. 4 c. £75	Borax — Melbourne, 30 kgs. £93
Melbourne, 6 £13	Paris, 2 t. 10 £70	Auckland, 16 c. £15	Amsterdam, 30 12 £35	Carbolic Acid — Pt. Elizabeth, 2 cs. 50 dms. £34
Fremantle, 15 £6	Dunkirk, 15 £25	Cape Town, 1 £11	Bremen, 50 375	San Francisco, 10 cks. 78
New York, 8 t. 105		St. Petersburg, 2 t. £40	Treport, 19 10 £52	Amsterdam, 25 £116
Ammonia (Liquid) — St. Petersburg, 4 c. £17				Durban, 8 t. 19 c. 90

Rotterdam, 15 dms. £63

Ammonium Carbonate—

Adelaide, 6 c. £11

Paris, 2 t. 10 £70

Dunkirk, 15 £25

Ammonium Chloride—

Melbourne, 12 cks. £105

Auckland, 16 c. £15

Cape Town, 1 £11

St. Petersburg, 2 t. £40

Ammonium Sulphate—

Paris, 10 t. 4 c. £75

Amsterdam, 30 12 £35

Bremen, 50 375

Treport, 19 10 £52

Bisulphite of Lime—

Bombay, 8 t. 16 c. £70

Boracic Acid—

Hiogo, 50 cs. £64

Sulphur & Copper Co.

Borax—

Melbourne, 30 kgs. £93

Carbolic Acid—

Pt. Elizabeth, 2 cs. 50 dms. £34

San Francisco, 10 cks. 78

Amsterdam, 25 £116

Durban, 8 t. 19 c. 90

Carbonic Acid Gas—

New York, 13 cs. £72

Jersey, 40 tubes 15

Caustic Soda—

Hobart,	1 t.	3 c.	£6
E. London,	6		13
Brisbane,	10		10
Santos,	13	3	98
Pt. Elizabeth,	5	4	86
Delagoa Bay,	1	6	31
Melbourne,	5	5	8
Seychelles,	5	16	58

Chemicals (otherwise undescribed)

Rotterdam,	4 cks.	33
Gibraltar,	3 pks.	20
Sydney,	59	280
Bombay,	5 cs.	32
Genoa,	16 pks.	116
Townsville,	6	16
Leghorn,	10 kgs.	58
Lyttelton,	5 cs.	43
St. John, N.B.,	12 pks.	33
Auckland,	19	65
Melbourne,	65	94
Wellington,	30	42
Trinidad,	9 cs.	28
Cologne,	25 kgs. 2 cks.	54
Hamburg,	40 5 pks.	142
Jamaica,	6 cs.	27
Demerara,	100 crbys.	26
Boulogne,	1 ck. 1 cs.	20
Falkland Is.,	4	12
Toronto,	4	27
Paris,	6	15

Citric Acid—

Pt. Elizabeth,	1 c.	£6
Mombassa,	1	8
Sydney,	1 t. 5	155
Amsterdam,	7 kgs.	45
Calcutta,	3 cs.	23
Durban,	1	7
Wellington,	1	7
Christiania,	2	10
Kobe,	1	6
Bombay,	9 cs.	42

Coal Products—

Alliarine		
Sydney,	2 cks.	£55
Boston,	120	1,413
New York,	25	280
St. Petersburg,	8 cs.	423
Aniline Oil		
New York,	20 dms.	£700
Aniline Salts		
New York,	27 cks.	£200
Anthracene		
Cologne,	330 cks.	£700
Benzol		
Boulogne,	39 cks.	£200
Creosote		
New York,	500 cks.	£238
Naphtha		
Durban,	20 cs.	£14
Wellington,	30 dms.	22
Trepost,	56 b l.	200
Naphthalene		
Cologne,	19 cks.	£100
Hamburg,	16	104
Pitch		
New York,	198 cks.	£75
Boston,	125	58
Alexandria,	550 brls.	190
Pyridine		
Rotterdam,	47 cks.	£500
Pyridine Bases		
Hamburg,	15 runs.	£155
Tar		
St. Petersburg,	830 brls.	£412
Pt. Elizabeth,	300 dms.	61
Canterbury,	12 pks.	5
Sydney,	100 dms.	20
Seychelles,	10 runs.	11
E. London,	500 dms.	96

Copper Sulphate—

Boulogne,	10 t.	£150
Antwerp,	10	150
Rouen,	20	330
Bombay,	2 10 c.	45
Brussels,	5	80
Dunkirk,	5	83
Paris,	29 16	492
Creom of Tartar—		
Sydney,	1 t. 10 c.	£117
Rockhampton,	10 kgs. 3 cs.	50
Wellington,	8 c.	32
Melbourne,	1 t.	80
Auckland,	3	12

Disinfectants—

Hamburg,	25 cks.	£125
Melbourne,	24 pks. 210 dms.	1 yk. 141
Canterbury,	6 cs.	15
Lyttelton,	100 cks. 9	78
Durban,	43 200 dms.	174
Singapore,	25	23

Guano—

Dunkirk,	200 f.	£850
Manure—		
Adelaide,	10 t.	£27

Stettin,	49 5 c.	125
Riga,	156 19	365
Sydney,	25 10	100
Bluff,	30 12	105
Trepost,	9 17	65
Durban,	7	20
Seychelles,	1	18
Cologne,	12 5	50

Phosphorus—

Wellington,	8 cs.	£83
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Potash—

Wellington,	1 t. 8 c.	£52
Halifax,	9	30
Brussels,	3 cs.	90

Potassium Bicarbonate—

Philadelphia,	15 c.	£21
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Potassium Chloride—

Calcutta,	1 t.	£45
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Potassium Cyanide—

Pt. Elizabeth,	10 t.	£793
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Potassium Prussiate—

Bombay,	5 c.	£14
Antwerp,	6 t. 3 c.	£281

Saltpetre—

Oporto,	7 t. 7 c.	£137
Santos,	4	84
Sydney,	1 2	20
Gothenburg,	1	21
Rio de Janeiro,	2 19	60

Sheep Dip—

Brisbane,	200 cs.	£350
Adelaide,	100	175
B. Ayres,	33 t. 3 c.	750
Melbourne,	4 500 cs. 1,095	12
Cape Town,	2 4	35
Dunedin,	1 8	45
Durban,	200 dms.	45

Soda—

Rotterdam,	5 t. 8 c.	£32
Demerara,	1 73	7
Sydney,	2 15	9

Sodium Bicarbonate—

Rockhampton,	1 t.	£7
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Sodium Carbonate—

Auckland,	6 c.	£8
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Sodium Silicate—

Lyttelton,	5 t. 14 c.	£25
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Sulphur—

Trinidad,	1 t. 1 c.	£21
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Sulphuric Acid—

Calcutta,	1 cs.	£16
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Tartaric Acid—

Sydney,	2 t. 5 c.	£269
Auckland,	3	18
Melbourne,	1 10	179

LIVERPOOL.

Week ending August 18th.

Albumen—

Vera Cruz,	14 c.	£40
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Alum—

Varna,	1 t. 9 c.	£7
Melbourne,	10 3	57
Smyrna,	7 4 1 q.	39
Rabat,	6 7 3	30
Lisbon,	6 14 2	30
Seville,	2 2 2	10
Bahia,	10 3	3
Galatz,	1 2 5	5
Madras,	4 12 1	25

Ammonium Carbonate—

Rangoon,	18 c.	£27
Marseilles,	1 t. 9	41
Genoa,	2 10	70
Lisbon,	19	25
Bilbao,	5	7
Montreal,	10 3 q.	15

Ammonium Chloride—

Piraeus,	5 c.	£7
Alexandretta,	1 t. 5	38
Trieste,	1	29
Barcelona,	1 8	27
Boston,	10	200
Smyrna,	1 15 2 q.	56
Genoa,	6 2 3	124
Naples,	1 13 2	49
Galatz,	14	22
Lisbon,	9	13
Antwerp,	1 11	29
Tripoli,	4	5
Braila,	6	10
Syria,	5	8

Ammonium Sulphate—

Ponce,	2 t. 5 c.	£15
Las Palmas,	24 18	216
Gd. Canary,	2	3 q.
New York,	49 15	275
Palermo,	15	113
Samarang,	98 17 3	713

Sourabaya,	49 7	
Genoa,	50 6	390
Barcelona,	5 10	40
Valencia,	30 13	235
Montreal,	8 4 3	54

Bleaching Powder—

Baltimore,	159 cks.	
Bilbao,	29	
Boston,	516	
Corunna,	4	
Havre,	15	
La Pallice,	15	
Leghorn,	30	
Montreal,	81	
New York,	357	
Oporto,	4 111 brls.	
Rio de Janeiro,	20 cs.	
Rouen,	42 cks.	
Seville,	113	
Valparaiso,	20 bxs.	
Vera Cruz,	20	

Boracic Acid—

Montreal,	14 c. 3 q.	£20
Toronto,	18 1	25

Borax—

Seville,	2 t. 7 c.	£40
Havre,	1	16
Providence R. J.,	3 10	28
Montreal,	3 14 2 q.	63
Toronto,	4 9	75
Antwerp,	5 8 2	87
Rotterdam,	8 brls.	9
Venice,	1 t. 2	22
Fiume,	8	8
Galatz,	1 15	35
Hamburg,	2 cks.	13
Melbourne,	11	8

Calcium Chloride—

Algoa Bay,	2 t. 10 c.	£6
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Carbolic Acid—

Rotterdam,	5 c.	£17
Antwerp,	2 t. 4 2 q.	136
Barcelona,	16	26
Baltimore,	15	10
Napier,	2 3	13
Sydney,	1 2 1	30

Caustic—

Piraeus,	20 dms.	
Quebec,	25	
Riga,	188 15 cks.	
St. Nazaire,	12	
Santos,	20	
Santander,	50	

Caustic Potash—

Melbourne,	1 t.	£20
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Caustic Soda—

Alexandria,	35 dms.	
Algoa Bay,	6 cs.	
Amsterdam,	65	
Barcelona,	250	
Bari,	30	
Batavia,	40	
Bremen,	4	5 brls.
Brisbane,	4	
B. Ayres,	30	
Catania,	55	
Coquimbo,	30	
Demerara,	12	
Galatz,	436	
Genoa,	237	
Hamburg,	30 10	
Jaffa,	42	
Karachi,	6	
Kingston,	17	
Leghorn,	35	
Malaga,	44 pks.	
Melbourne,	245	
M. Video,	50	
Montreal,	100	
Naples,	23	
New York,	185	
Odessa,	550	
Oporto,	65	
Palermo,	15	
Passages,	10 25 cks.	
Penang,	15	
Riga,	20 kgs.	
Rio de Janeiro,	105	
Rotterdam,	71	
Sourabaya,	162	
Stettin,	32	
Sydney,	32	
Talcahuano,	60	
Tarragona,	60 cks.	
Valencia,	60	
Yokohama,	200	

Chemicals (otherwise undes.)—

Boston,	1 t. 12 c.	£48
Alexandria,	1	31
Varna,	4	6
Rotterdam,	2 8	79
Philadelphia,	13 3	405
Helsingfors,	5	7
Antwerp,	12	19

Hamburg,	17	26
Calcutta,	86 11	1 q. 238
New York,	10 cks.	

China Clay—

Barcelona,	180 bgs	
Bombay,	110 180 cks.	40 brls.
Boston,	1,780	
Calcutta,	96	
Colombo,	20	
Genoa,	100	
Oporto,	100	
Trieste,	397	

Coal Products—

Aniline Colours		
Montreal,	3 kgs.	
Aniline Dyes		
Barcelona,	3 cs.	
Aniline Salts		
Genoa,	6 cks.	
Montreal,	16 cs.	
New York,	7	
Philadelphia,	20	
Piraeus,	5	

Creosote Oil

Bordeaux,	500 cks.	
E. London,	20 dms	
Naphtha		
Madras,	60 dms.	
Melbourne,	100	
Pitch		
Bilbao,	40 brls.	
Galatz,	30	
Tar		
Boston,	35 cs. 5 cks.	
Salt Pond,	17 dms.	
Sierra Leone,	30 brls.	
Tar Salts		
Hamburg,	79 cks.	

Coal Products (otherwise undes.)—

New York,	2 t. 12 c. 3 q.	£28
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Cobalt Oxide—

Lisbon,	1 bx.	£5
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Copper Sulphate—

Odessa,	2 t. 18 c.	£44
Amsterdam,	8 3	120
Genoa,	2 16 1 q.	39
B. Ayres,	7 6 3	150
New York,	10 3	8
Vera Cruz,	10	22
Konigsberg,	1 8	54
Smyrna,	3 10	7
Rio de Janeiro,	9 1	78
Calcutta,	5 11	84
Melbourne,	5 11	22
Madras,	1 5	40
Bombay,	2 10	305
Santos,	19 14 3	81
Ghent,	4 19 1	76
Nantes,	4 18 2	16
Montreal,	1	2
Cabania,	5	3
Braila,	4	16
Salonica,	1	2
Christiania,	4 8 2	68
Antwerp,	5 2	

Pt. Elizabeth, 40 dms.		Sherbro, 20 1		Melbourne, 850 bgs. 67		MANCHESTER	
St John's N'ld., 1 cs. 2		Sydney, 1,050		Montreal, 150		<i>Week ending August 18th.</i>	
Sagua La Grande 2		Trinidad, 8		Naples, 390	96 tcs. 15	Alum —	
San Sebastian, 10 dms.		Tumba, 15		New York, 400	25	Aleppo, 25 brls.	
Sierra Leone, 5		Valparaiso, 308 12		Philadelphia, 400	15	Alexandria, 247	
Taltal, 6				Riga, 400 kgs.	74 brls.	Tunis, 4	
Victoria, B.C., 100		Salt Cake —		Rio de Janeiro, 400 kgs.	10	Ammonium Carbonate —	
Iloilo, 250 kgs.		Antwerp, 210 t. £259		Rockhampton, 227 bgs.	40	Hamburg, 24 cks.	
Painters' Colours —		Leghorn, 200		Rotterdam, 227 bgs.	10	Ammonium Chloride —	
Bahia, 26 brls. 19 cs. 76 kgs.		Lisbon, 40 t. 10 c.		Salonica, 60 kgs.	20	Tunis, 2 brls.	
Baltimore, 189 cks.		Saltpetre —		Savanilla, 700 bgs.	42	Aniline —	
Boston, 1		Ceara, 1 t. £21		Smyrna, 20	177	Antwerp, 6 pks.	
Bremen, 1		Para., 14 c. 1 q. 37		Sydney, 58		Aniline Oil —	
B. Ayres, 40 30 200 bgs.		Rio Grande do Sul, 9 3 12		Tacoma, 10		Rotterdam, 1 dm.	
Cape Town, 17		Valparaiso, 16 t. 16 350		Valparaiso, 120		Aniline Salts —	
Genoa, 50 pks.		Sheep Dip —		Venice, 120		Rotterdam, 11 cks.	
Geraldton, 7		B. Ayres, 2 t. 16 c. £70		Soda Crystals —		Caustic Soda —	
Gothenburg, 50		M. Video, 10 19 1 q. 193		Alexandria, 50 brls.		Alexandria, 50 dms.	
Leghorn, 50		Algoa Bay, 33 6 25 dms. 701		Boston, 280	336 cks.	Cairo, 22	
Lisbon, 45		Punta Arenas, 11 1 q. 403		Malta, 50		Chemicals (otherwise undescr.)	
Malmö, 10		E. London, 13 5 394		Montreal, 50 kgs. 205		Alexandria, 40 cks.	
Mayaguez, 26 pks.		Montreal, 7 10 130		New York, 280	140	Cairo, 10	
N. Orleans, 3 brls.		Cape Town, 3 7 1 8		Pt. Natal, 25		Colours —	
New York, 18 333 150 l-gs.		Valparaiso, 3 14 120		St. John's N'ld., 60		Antwerp, 1 cs.	
Odessa, 34		Kingston, Jam., 8 14		Sydney, 149		Copper Sulphate —	
Oporto, 99		Soap —		Talcabuan, 120		Beyrout, 2 cks.	
Para, 43 brls. 12 tcs.		Aden, 50 bdl.		Valparaiso, 100	100	Copperas —	
Pimental, 15 cs.		Alexandria, 480 kgs. 70 cs.		Alexandria, 10 kgs. 20 brls.		Aleppo, 50 brls.	
Ponce, 3		Algoa Bay, 810 2 235		Antwerp, 13	10 cks.	Alexandria, 9 cks.	
Rangoon, 100 bgs.		Amsterdam, 183		Bombay, 285		133	
Rio de Janeiro, 100 kgs.		Amboina, 50		Braila, 35		Cottonseed Oil —	
Rotterdam, 150 bgs.		Axim, 1:0		Bourgas, 20		Tunis, 9 brls.	
St. Petersburg, 37 cks.		Baltimore, 1		Brisbane, 130		Creosote Salts —	
Salaora, 5 brls.		Barbadoes, 600		Calcutta, 750		Rotterdam, 57 cks.	
Santander, 26		Boma, 100		Care Town, 25 30 bgs.		Linseed Oil —	
Sydney, 27		Bombay, 890 350 49		Constantza, 28		Caifa, 1 brl.	
Valparaiso, 20 cs.		B. Ayres, 30 2		Copenhagen, 40		Larnaca, 4	
Phosphorus —		Cabenda, 30		Corunna, 70 brls. 4		Susa, 5	
Hiogo, 2 t. £460		C. C. Castle, 30		Danzig, 20		Alexandria, 10	
Potassium Bichromate —		Cape Town, 53 7,103		Dunedin, 250		Logwood —	
San Sebastian, 5 cks. £82		Curacao, 210		Genoa, 110		Alexandria, 117 bgs.	
Samsoun, 3		Delagoa Bay, 193 pks. 31		Hamburg, 75	18	Myrbane —	
Vera Cruz, 1 t. 42		Hamburg, 150 1,500		Hiogo, 400		St. Petersburg, 10 dms.	
Potassium Carbonate —		Havre, 260 cs.		Ibrail, 35		Naphtha —	
Genoa, 1 t. 1 c. 2 q. £50		Karachi, 350 1,026		Lisbon, 20		Trepot, 50 cks.	
Singapore, 18 15		Kingston, 2,120 1 ck.		Madras, 100		Paint —	
Potassium Chlorate —		Lagos, 45		Marseilles, 80		Caifa, 6 kgs. 2 cs.	
Hong Kong, 1 t. £33		Las Palmas, 615		Melbourne, 80	11	Jaffa, 3 cks.	
Hiogo, 12 10 c.		Madras, 65		Montreal, 220 150 bgs.		Painters' Colours —	
Rio de Janeiro, 1 36		Malta, 50		Naples, 87		Jaffa, 11 brls.	
Riga, 4 6		Manaos, 450		Riga, 15		Larnaca, 2 cks. 5	
Funchal, 3 6		Manila, 1		Rosario, 100	50	65 kgs.	
Gothenburg, 10 347		Montego Bay, 280		Rotterdam, 10 2 brls. 11		Potassium Bichromate —	
Montreal, 6 3 9		Montreal, 311		St. John's N'ld., 10		Alexandria, 4 brls.	
Hamburg, 6 18 214		Naples, 10		St. Petersburg, 100		Shumac Extract —	
Genoa, 1 30		N. Orleans, 150		Santander, 75		Gothenburg, 5 cks.	
New York, 5 44		Opobo, 1,278		Seville, 4		Soap —	
Alexandria, 2 75		Para, 550		Sydney, 200		Hamburg, 1 ck.	
Sydney, 9 206		Penang, 950 19 bdl.		Tampico, 20		Malta, 5 cs.	
Melbourne, 3 3 102		Pt. Elizabeth, 100		Venice, 20		Bombay, 21	
Rotterdam, 1 30		Pt. Natal, 100		Vera Cruz, 20		Soda Crystals —	
Lisbon, 10 17		Quebec, 500 4		Vigo, 6		Alexandria, 100 brls.	
Bari, 10 17		Rangoon, 13 10 dms 208		Wellington, 185		Sfax, 10 bgs.	
Gutajewsky, 17 10 642		Rotterdam, 30		Sodium Bisulphite —		Sodium Bicarbonate—	
Potassium Cyanide —		St. John's N'ld., 75		Brisbane, 6 cks.		Beyrout, 20 kgs.	
Rio de Janeiro, 1 t. £88		Salonica, 26		Melbourne, 9		Tunis, 30	
Potassium Prussiate —		Salt Pond, 40		Sodium Carbonate —		Tallow —	
Genoa, 4 t. 2 c. 2 q. £215		Savanilla, 2		Boston, 56 bls.		Rotterdam, 15 cks.	
Salt —		Seville, 3,034		B. Ayres, 50 cks.		Antwerp, 10 pks.	
Abonnema, 10 t.		Shanghai, 50		New York, 56 brls.		Whiting—	
Akassa, 998 10 c.		Sherbro, 2,226		Lisbon, 1 cs.		Jaffa, 5 cks.	
Algoa Bay, 17 15		Singapore, 25		St. Petersburg, 80 kgs.		HULL.	
Amsterdam, 190		Sourabaya, 27		Sodium Hyposulphate —		<i>Week ending August 14th.</i>	
Antwerp, 390		Trinidad, 635		Palemo, 15 kgs.		Alkali —	
Axim, 10		Valparaiso, 260		Lisbon, 15 cks.		Bergen, 4 dms.	
Baltimore, 250 1,500 sks.		Warri, 460		Naples, 2 cks.		Constantinople, 4 cks.	
Bay Verte, 300		Soda —		Sulphur —		Libau, 50 pks.	
Boston, 100		Hamburg, 40 kgs. 2 cks.		Demerara, 14 t. 17 3 q. £5		Riga, 260 bgs.	
B. Ayres, 35 14		St. John's N'ld., 2 cks.		17 91		50	
Calcutta, 4,782		Soda Alkali —		Sulphuric Acid —		Ammonium Sulphate —	
Cameroons, 500 bgs.		Catania, 15 brls.		Rio de Janeiro, 6 t. 16 c. £40		Stettin, 500 bgs.	
Christiania, 200 250 cs. 100 sks.		Genoa, 35		Corinto, 8 1 2 q. 41		Barium Carbonate —	
Clarence, 1,400		Leghorn, 52		Superphosphates —		Stettin, 3,000 t.	
Conakry, 900		Soda Ash —		Konigsberg, 640 t. 7 c. 3 q. £2500		Bleaching Powder —	
Fuca, 300 50 2 0:0		Antwerp, 3,090 bgs. 161 cks.		Tar Salts —		New York, 6 cks.	
Ghent, 105		Baltimore, 1,680 20 tcs. 12		Hamburg, 24 t. 12 c. 1 q. £875		Caustic Soda —	
Kingston, 105		Boston, 229 brls. 181		Varnish —		Amsterdam, 39 dms.	
Lagos, 50 1,220		Brisbane, 235 kgs. 30		Arcife, 2 cs.		Danzig, 30	
Madras, 30 1,00 hgs.		Callao, 30		Barcelona, 3		Helsingfors, 27 cks.	
M. Video, 16,207 sks.		Cape Town, 80 bgs. 20		Cadiz, 8 dms.		New York, 273	
Montreal, 3 0:0		Copenhagen, 100 50		Corfu, 2 pks.		Riga, 104	
N. Orleans, 57 10 c. 75 bgs.		Dunedin, 40		Havana, 1		Wyburg, 22	
Noqui, 20		Fiume, 100		New York, 3 cks.		Chemicals (otherwise undescr.)	
Opobo, 90		Genoa, 50 10		Oporto, 1		Amsterdam, 75 cks.	
Para, 259 7		Ghent, 47				Antwerp, 2 cs.	
Port Arenas, 4 11 50 cs.		Gothenburg, 300					
Rio de Janeiro, 8		Havana, 20 kgs. 350					
Rio Del Rey, 8		Hiogo, 70					
Rosario, 30		Maranham, 70					
Rotterdam, 120							
St. Petersburg, 5							
San Francisco, 44 13 c.							
Sapeli, 13 7							

Christiania,	2 sks.	2,923 lbs.
Dunkirk,	6	49 pks.
Danzig,	46 kgs.	600
Gothenburg,	10	6
Hamburg,	22 cks.	117
Königsberg,	20	9
Odessa,	10	10
Rotterdam,	37	11 brls.
Riga,	20	135 pks.
Rouen,	1	4
Stockholm,	20	61
St. Petersburg,	11	1
Stettin,	5	5
Wiburg,		

Cottonseed Oil—

Amsterdam,	268 c.
Antwerp,	302
Bremen,	99
Christiania,	98
Christiansand,	87
Constantinople,	112
Copenhagen,	17
Gothenburg,	303
Hamburg,	303
Königsberg,	30
Rotterdam,	791
Rouen,	203
Stockholm,	200

Dyestuffs (otherwise un-described)

Christiania,	37 sks.
Constantinople,	1 ck.
Rotterdam,	1 cs.

Guano—

Dunkirk,	500 bgs.
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Linseed Oil—

Amsterdam,	101 c.
Antwerp,	100
Christiania,	646
Christiansand,	32
Copenhagen,	27
Drontheim,	42
Hamburg,	305

Manure—

Riga,	4,145 bgs.
Stettin,	965
Rouen,	10 t.

Naphthol—

St. Petersburg,	102 bgs.
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Paint—

Drontheim,	1 cs.
Helsingfors,	2
Stockholm,	1
St. Petersburg,	1 ck.
Stavanger,	1

Painters' Colours—

Antwerp,	14 cks.
Abo,	70
Bergen,	48 dms.
Bremen,	32
Christiania,	19
Christiansand,	4
Copenhagen,	10
Danzig,	1
Gothenburg,	50
Helsingfors,	124
Hamburg,	8
Königsberg,	10
New York,	24
Norwegian,	2
Odessa,	264
Rotterdam,	8
Rouen,	77
Stockholm,	12
Stettin,	20

Pitch—

Antwerp,	124 t.
Helsingfors,	10 cks.
Odessa,	100

Salt—

Helsingfors,	50 bgs.
Liban,	80
Norwegian,	2
Rangoon,	435 t.

Soap—

Amsterdam,	50 bks.
Christiania,	2 c.
Copenhagen,	3
Rotterdam,	20

Tallow—

Danzig,	10 cks.
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Tar—

Abo,	20 cks.
Bergen,	5
Bremen,	14
Christiansand,	5
Copenhagen,	20
Danzig,	5
Helsingfors,	105
Hamburg,	18
Odessa,	10 br's.
Waxa,	20

Varnish—

Antwerp,	1 cs.
Copenhagen,	1 ck.
Gothenburg,	1
Hamburg,	2
Norwegian,	2

GLASGOW.

Week ending August 19th.

Ammonia (Liquid)—

Sydney,	£33
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Ammonium Carbonate—

Christiania,	£8
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Ammonium Sulphate—

Rotterdam,	202 t. 15 c.
Demerara,	44 8½
Rouen,	20 6
Trinidad,	30 18½
Venice,	20 7½
Hamburg,	50 13
Italy,	112 9½
Valencia,	151 3

Bleaching Powder—

Rouen,	11 t. 9½ c.
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Caustic Soda—

Rouen,	5 t.
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Chemicals (otherwise un-described)

Melbourne,	£145
Cape Town,	39
Rangoon,	55

Chloroform—

Adelaide,	£22 17½
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Coal Products—**Aniline Dyes**

Serampore,	£33
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Creosote Oil

France,	£2,538
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Pitch

Hamburg,	100 t.
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Canada,	£187
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Gothenburg,	145
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Tar

Calcutta,	£255
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Madras,	97
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U.S.A.,	43
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Rangoon,	94
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Hamburg,	289 brls.
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Canada,	46
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Coal Products (otherwise un-des.)—

Riga,	£407
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Rotterdam,	35
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Hamburg,	515
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Dried Blood—

Ghent,	29 t. 10½ c.
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Extracts—

Antwerp,	£4 9. 17½
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Rotterdam,	£10
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Malmö,	44
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Farina—

Antwerp,	2 t. 13 c.
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Fustic—

Antwerp,	£. 64
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Gambler—

Natal,	£41
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Gelatine—

Canada,	£146
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Iodine—

Rotterdam,	£800
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Lead Acetate—

Bombay,	£79
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Lime—

Demerara,	100 t.
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Linseed Oil—

Durban,	1 t.
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Pietermaritzburg,	1 15½ c.
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Canada,	8 12½
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Hong Kong,	1
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Singapore,	5 7½
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Litharge—

Bombay,	£34
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Magnesium Chloride—

Rouen,	£25. 10s.
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Manganese—

Rouen,	£65
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Basle,	11 t. 12 c.
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Paint—

Calcutta,	£836
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Pietermaritzburg,	£74. 10s.
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Rangoon,	22 10
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B. Ayres,	£20
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Hong Kong,	10
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Singapore,	55
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Painters' Colours—

Adelaide,	£41
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Bombay,	00
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Melbourne,	85
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Sydney,	53
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Cape Town,	56
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Paraffin Wax—

Paris,	£75
Rouen,	£82. 10s.
Algoa Bay,	£160
Fiume,	1,145
Trieste,	45
Antwerp,	20
Barcelona,	463

Potassium Bichromate—

Bombay,	£109
Rotterdam,	471
Rouen,	239
Venice,	3 t. 11½ c.
Amsterdam,	185
Antwerp,	49
Ghent,	270
Italy,	442

Potassium Cyanide—

Adelaide,	£150
Melbourne,	587
Transvaal,	358
Fremantle,	272

Rosin Oil—

Antwerp,	£50
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Soap—

Bombay,	5 t. 15½ c.
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Hankow,	2
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Sodium Bicarbonate—

Rouen,	38 t. 11½ c.
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Sodium Bichromate—

Bombay,	3 t. 7 c.
Paris,	5 3½
Venice,	7½
Antwerp,	4 1½
Ghent,	6 18½
Italy,	6 6½
Rouen,	27 9

Starch—

Rotterdam,	2 t. 6½ c.
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Sulphur—

Demerara,	£71
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Sulphuric Acid—

Calcutta,	£39
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Rangoon,	312
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Treacle—

Christiania,	5 t. 6 c.
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Gothenburg,	0 2
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Natal,	1 11½
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Varnish—

Sydney,	£20
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White Lead—

Calcutta,	qty.
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Natal,	£79
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TYNE.

Week ending August 14th.

Alkali—

Hamburg,	2 t. 17 c.
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Venice,	7 9
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Christiania,	30 8
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Rotterdam,	24 19
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Riga,	75 4
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Gothenburg,	11 19
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Amsterdam,	29 16
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Alum—

San Francisco,	20 t. 17 c.
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Aluminous Cake—

Montreal,	21 t. 14 c.
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Ammonium Chloride—

Gothenburg,	1 t. 1 c.
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Ammonium Sulphate—

Rostock,	20 t.
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Antimony—

Hamburg,	20 t.
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Montreal,	2
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Stockholm,	2
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Barcelona,	1
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St. Petersburg,	10
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Arsenic—

Barcelona,	2 t. 13 c.
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Barium Binoxide—

Rouen,	5 t. 3 c.
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Barium Carbonate—

Rotterdam,	135 t.
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Rouen,	5
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Bleaching Powder—

Antwerp,	25 t. 11 c.
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Rotterdam,	12 13
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Gothenburg,	30 5
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San Francisco,	50 1
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Caustic Soda—

Riga,	5 t.
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Hamburg,	21 10 c.
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Antwerp,	14 15
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Montreal,	10 3
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Christiania,	14 8
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Rotterdam,	1
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Copenhagen,	8 14
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Genoa,	4
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Barcelona,	87 16
Gothenburg,	22 6
San Francisco,	29

Col

PRICES CURRENT.

WEDNESDAY, AUGUST 25TH, 1897.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—

	£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/6	& 8/6
„ Glacial	„	40/-	
Arsenic S.G., 2000°	„	1	4 0
Fluoric	per lb.	0	0 3½
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0 10
„ (Cylinder), 30° Tw.	„	0	3 0
Nitric 80° Tw.	per lb.	0	0 1½
Nitrous	„	0	0 1½
Oxalic	nett	0	0 3½
Phosphoric, 1750°	„	0	0 11½
Picric	„	0	0 11
Sulphuric (fuming 50 %/.)	per ton	15	10 0
„ (monohydrate)	„	5	10 0
„ (Pyrites, 168°)	„	3	0 0
„ „ 150°	„	1	5 0
„ (free from arsenic, 145°)	„	1	7 6
Sulphurous (solution) S.G. 1025	„	3	0 0
Tannic (pure)	per lb.	0	1 2½
Tartaric	„	0	1 1½
Arsenic, white powdered	nett per ton	22	15 0
Alum (loose lump)	„	4	10 0
Alumina Sulphate (pure)	„	4	2 6
Aluminoferic	„	2	3 6
Aluminium (Ingot metal 98/99¾ %	nett	148	0 0
Ammonia, Anhydrous	per lb.	0	1 3
„ 880=28° B.	„	0	0 2½
„ =24° B.	„	0	0 1¾
„ Carbonate	nett	0	0 3
„ Muriate	per ton	18	0 0
„ (sal-ammoniac) 1st & 2nd	per cwt.	33/-	& 31/-
„ Nitrate	per ton	31	0 0
„ Phosphate	per lb.	0	0 3½
„ Sulphate (grey) London	per ton	7	12 6
„ (grey) Hull	„	7	12 6
Aniline Oil (pure)	per lb.	0	0 7½
Aniline Salt	„	0	0 7
Antimony	per ton	29	15 0
„ (tartar emetic)	per lb.	0	0 9
„ (golden sulphide)	„	0	0 10
Barium Chloride	per ton	6	10 0
„ Carbonate (native)	„	3	10 0
„ Sulphate (native levigated)	„	42/6	to 65/-
Bleaching Powder, 35 %	aett	6	7 6
„ Liquor, 7 %	„	3	10 0
Bisulphide of Carbon	„	12	0 0
Chromium Acetate (crystal)	per lb.	0	0 6
Calcium Chloride	per ton	2	2 6
China Clay (at Runcorn) in bulk	„	15/-	to 30/-
Coal Tar Products and Dyes:—			
Alizarine (artificial) 20 %	nett per lb.	0	0 5¾
Magenta	„	0	3 9
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0	0 6
Benzol, 90's	per gallon	0	1 11
„ 50/90	„	0	2 1
Carbolic Acid (crude 60°)	per gallon	0	2 0
„ (crystallised 40°)	per lb.	0	0 7½
„ (liquid 95/97%)	per gallon	0	1 0
Creosote (ordinary)	„	0	0 2½
„ (filtered for Lucigen light)	„	0	0 3
Crude Naphtha 30 % @ 120° C.	„	0	0 11
Grease Oils, 22° Tw.	per ton	2	15 0
Pitch, f.o.b. Liverpool or Garston	„	1	0 0
Solvent Naphtha, 90 % at 160°	per gallon	0	1 7
Copper	per ton	48	12 6
„ Sulphate	„	16	10 0
„ Oxide (copper scales)	„	44	10 0
Glycerine (crude)	„	30	0 0
„ (distilled S.G. 1250°)	„	60	0 0
Iodine	nett, per oz.	0	0 7½
Iron Sulphate (copperas)	per ton	1	10 0
„ Sulphide (antimony slag)	„	2	0 0
Lead (sheet) for cash	„	14	0 0
„ Litharge Flake (ex ship)	„	14	15 0
„ Acetate (white)	„	22	0 0
„ „ brown	„	15	0 0
„ Carbonate (white lead) pure	„	16	15 0
„ Nitrate	„	19	0 0

	£	s.	d.
Lime, Acetate (brown) (ex ship)	per ton	5	0 0
„ „ (grey) (ex ship)	„	8	0 0
Magnesium (ribbon and wire)	per oz.	0	2 3
„ Chloride (ex ship)	per ton	2	10 0
„ Carbonate	per cwt.	1	17 6
„ Calcined Magnesia	per ton	8	0 0
„ Sulphate (Epsom Salts)	per ton	2	15 6
Manganese, Sulphate	„	16	0 0
„ Borate	per cwt.	2	10 0
„ Ore, 70 %	per ton	3	10 0
Methylated Spirit, 61° O.P.	per gallon	0	1 8
Naphtha (Wood), Solvent	„	0	2 9
„ „ Miscible, 60° O.P.	„	0	3 9
Oils:—			
Cotton-seed	per ton	16	15 0
Linseed	„	18	0 0
Stearine	per ton	22	0 0
Phosphorus (yellow)	per lb.	0	2 2
„ (red)	„	0	2 8
Potassium (metal)	per oz.	0	3 7
„ Bichromate	nett per lb.	0	0 4½
„ Carbonate, 90% (ex ship)	per ton	16	10 0
„ Chlorate	per lb.	0	0 4
„ Cyanide, 98%	„	0	0 10½
„ Hydrate (Caustic Potash) 90 %	per ton	23	15 0
„ „ (Caustic Potash) 75/80 %	„	20	0 0
„ „ (Caustic Potash) 70/75 %	„	19	10 0
„ Nitrate (refined)	per cwt.	1	1 6
„ Permanganate	per cwt.	3	15 0
„ Prussiate Yellow	per lb.	0	0 5½
„ Sulphate, 90 % (ex ship)	per ton	9	15 0
„ Muriate, 80 % (do.)	„	8	10 0
Silver (metal)	per oz.	0	1 11¾
Sodium (metal)	per lb.	0	2 11
„ Carb. (refined Soda-ash) 48 %	nett per ton	4	15 0
„ „ (Caustic Soda-ash) 48 %	„	4	5 0
„ „ (Carb. Soda-ash) 48 %	„	4	0 0
„ „ (Alkali) 58 %	„	3	17 0
„ „ (Soda Crystals)	„	2	5 0
„ Acetate (ex-ship)	„	12	0 0
„ Arseniate, 45 %	„	14	7 0
„ Chlorate	per lb.	0	0 0
„ Borate (Borax)	net, per ton	14	15 0
„ Bichromate	per lb.	0	0 0
„ Hydrate (77 % Caustic Soda)(f.o.b.) net pr. ton	„	8	15 0
„ „ (74 % Caustic Soda)	„	8	0 0
„ „ (70 % Caustic Soda)	„	7	2 0
„ „ (60 % Caustic Soda)	„	6	2 0
„ „ (pure liquor 90° Tw.)	„	3	12 0
„ „ 77/78 % powdered (99 % hydrate)	„	12	10 0
„ Bicarbonate	„	6	10 0
„ Hyposulphite	„	5	0 0
„ Manganate, 25%	„	15	0 0
„ Nitrate (95 %) ex-ship Liverpool	per cwt.	0	7 4
„ Nitrite, 98 %	per ton	27	10 0
„ Phosphate	„	10	10 0
„ Silicate (glass)	per ton	4	10 0
„ „ (liquid, 100° Tw.)	„	3	7 6
„ Stannate, 40 %	per cwt.	3	2 9
„ Sulphate (Salt-cake)	per ton	0	19 0
„ „ (Glauber's Salts)	„	1	7 6
„ Sulphide	„	6	15 0
„ Sulphite	„	5	0 0
Strontium Hydrate, 100%	„	10	15 0
Sulphocyanide Ammonium, 95 %	per lb.	0	0 6
„ Barium, 95 %	„	0	0 4½
„ Potassium	„	0	0 6½
Sulphur (Flowers)	per ton	7	10 0
„ (Roll Brimstone)	„	6	10 0
„ Brimstone : Best Quality	„	4	12 6
Superphosphate of Lime (26 %)	„	2	5 0
Tallow	„	19	0 0
Tin Crystals	per lb.	0	0 4½
„ English Ingots	per ton	64	10 0
Zinc (Spelter)	„	17	2 6
„ Chloride (solution, 100° Tw.)	„	4	17 6
„ Sulphate, Crystal	„	5	2 6

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Contents.

	PAGE		PAGE
A Crisis in the Sewage Question ..	145	Tar and Ammonia Products	152
The Limoges Porcelain Industry ..	146	Miscellaneous Chemical Market ..	152
The Patent List	147	The Metal Markets	153
Abstracts of Latest Complete Spec-		Report on Manure Material	153
ifications	147	Liverpool Oil and Colour Market ..	153
The Song of the Irwell	147	Hull Paint, Oil, and Colour Report ..	153
Suggestions on Safe Petroleum and		West of Scotland Chemicals	153
Lamps	148	Tyne Chemical Report	153
The Kentish Coalfield	149	New Companies	154
Reports of Companies	149	Imports	154
The Manchester Sewage Problem ..	151	Exports	157
Trade Notes	152	Prices Current	160

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A CRISIS IN THE SEWAGE QUESTION.

THE dangers of prophecy are great, and we rarely care to take the risks; but it seems that half unconsciously we did so almost exactly a year ago when speaking of the then novel culvert scheme for the disposal of the Manchester sewage effluent.

Having prophesied rightly we have no cause to complain, but the actual fulfilment of our expectations puts a new face on several points in the sewage question.

The purification of our rivers is an excellent and commendable object, but the treatment of sewage is a costly affair at the best, and bearing this in mind it becomes necessary to judge between what is Utopian and what is expedient in each case.

The treatment and filtration of moderate amounts of sewage have now been virtually provided for, and success is attending the efforts of the majority of places at a reasonable cost.

With Manchester and other large centres under the jurisdiction of the Joint Rivers Committee, however, filtration is difficult and costly. The up-keep is heavy and the results dubious.

The existence of a purification Board has placed the largest centres in an awkward position, because that Board, though doubtless actuated by the best of motives, seems to us to be making the mistake of insisting upon the immediate attainment of results which will inevitably require time for their realisation.

In the case of Manchester the outcome has been the selection of a culvert scheme to carry the effluent into tidal waters, and so evade the jurisdiction of the Joint Committee. The cost is great, but it will be less in the long run than the cost and maintenance of filters, coupled with the Joint Committee's fines.

In considering this matter, the ratepayers cannot do better than study the speech of Sir J. Harwood, which appears elsewhere in these columns. His statement of the case is unbiassed by any fear of being cornered when serving on the Mersey and Irwell Joint Committee, or by any catch-vote policy of economy at any price. The anomaly of Sir H. Roscoe being employed as adviser to the Corporation and the Joint Committee at the same time, which Sir J. Harwood refers to, has been exposed by us in the back numbers of the *Journal* to such a degree as to show that the fact of one man acting as counsel both for the plaintiff and the defendant is only equalled by the paradoxical extravagancies of Gilbertian comic opera.

Moreover, we see and smell the Irwell daily before it runs into the Canal, and it is hard to conceive that the Davyhulme effluent can make such Stygian waters worse. Till the Joint Committee can bring the Irwell at Throstle Nest up to within two-thirds of their own standard, why should they com-

the Corporation to produce a still better effluent, or discharge it outside their jurisdiction? Yet this is what it really amounts to. The culvert scheme would never have been accorded half-an-hour's consideration had not the Corporation known that they could not turn out an effluent up to the present standard in the three months allotted by the Joint Committee.

In making a decision, then, the ratepayers have to choose between the cost of the culvert scheme, or deciding that the Mersey and Irwell Joint Committee seek to attain too high a standard of purity, which, if lowered for the time being would render the precipitation and settlement of the sewage sufficient in itself to meet the case, while effecting an improvement in the state of the Irwell and Ship Canal.

This is an important point, because the ratepayers have the power to dictate to the Joint Committee on the question of a desirable standard of purity, whereas the polluters have not.

On the face of things it would scarcely be fair to have one standard for the small polluters, and another for the large, though as a matter of fact the fairness of a standard depends entirely upon the possibilities of attainment. If it is honestly demonstrated that what the one can do the other cannot, then two standards would be compatible with justice and common sense. On the other hand any attempt at such an arrangement is bound to lead to constant bickering and many heartburnings.

We are therefore driven once more to a choice from the dual option of a standard of purity attainable by all polluters, small and large alike, or adopting the expensive culvert scheme as the only way of escaping the penalties for infringing the existing hypercritical standard of the Committee.

Such being the position, there are one or two points to be dealt with, supposing the culvert suggestion is finally adopted.

If so be that this solution of the difficulty is selected, it will be a pity if the best use is not made of it. The undertaking should be a joint one. Salford at least should dispose of its effluent in the same way, and down the same culvert. Other towns within reasonable distance might also join; but, while this would swell the scheme to gigantic proportions, the inclusion of Salford should be a certainty.

Both Corporations propose to send their sludge to sea in steamers, so that the conditions for amalgamation are all the easier. Pollution from the two largest centres would then cease. The irksome demands of the Joint Committee would be disposed of, and the public would benefit in a duplex ratio to the cost, which would be halved and possibly quartered.

November, with its Council elections, is not far distant, so the ratepayers are in an exceptionally strong position for backing up the efforts of the Corporation, and it is their own fault if they do not effect a change towards rational sewage treatment and reasonable river purification at a respectable cost.

In conclusion we cannot but once more deplore the action of the Joint Committee in practically seizing Manchester by the throat and compelling it to pay over a quarter of a million as a ransom. Believing, as we do, that the Manchester effluent is—or may easily be made—better than the canal water into which it is turned, we think the case of the Committee "not proven." If in a few years the Canal Company should beg for a return of the effluent, the materials of the disused culvert might be dug up and erected as a monument to the enduring wisdom of the Joint Committee and its chemical adviser.

THE LIMOGES PORCELAIN INDUSTRY.

THE United States commercial agent at Limoges devotes a recent report to an account of the history and methods of manufacture of the famous porcelain factories at Limoges. The whole development of the industry, from the discovery of kaolin at St. Yrieix to the establishment throughout the world of the name and fame of Limoges ware, has taken place in the last 100 years. In hardness, translucency, and general suitability for table and decorative uses this ware is not surpassed, and it is so much appreciated in the United States that nearly three-fourths of the total products of the Limoges factories go there. The deposits of kaolin in St. Yrieix, in Haute Vienne, from which the supply for Limoges is drawn, are described as the purest in the world, and answer to the formula given by chemists for true kaolin. There are many other deposits of decomposed feldspathic rock in France and Great Britain, but they all contain more or less water, iron, mica, magnesium, and often sulphur. Excess of water is extremely injurious in making the delicate paste used by Limoges potters, and the different grades in the ware are frequently produced by mixing cheaper and impure clays with the true kaolin. The glaze consists chiefly of feldspath and kaolin, many makers adding a certain proportion of ground china. One of the features of Limoges ware is a total absence of lead; the excessive heat required to fire hard china would make it useless. The process of manipulating the clay and firing differs in France from that in other countries. British and American potters make a very hard bisque and a very soft glaze, while the French reverse the order of manufacturing. The Limoges potters have made great progress in the art of firing china, and the old method, so common in other countries, was abandoned ten years ago, on account of the high price of coal and the great loss in inferior goods. The old kilns were replaced by down-draught furnaces in two storeys, the lower filled with glaze ware, the upper with bisque. The system (which is described in detail in the report) is said to be more economical, to regulate the heat better, and to prevent loss of it. Various improvements of the system are made from time to time, and illustrations of one of these—which is said to possess great advantages in the matter of economy of fuel, saving of time, regularity and control of the heat, reduction of labour, and improvement in the quality of the porcelain—are included in the report. The decoration of Limoges ware has been reduced to a very fine art. The processes of lithographing and decalcomania have replaced all hand-painting except for rich decorations and for special purposes. Small manufacturers purchase the sheets already prepared for decoration, employ girls to put the pictures on the china, and then have the latter fired to set the colours. The large manufacturers, however, make their own decalcomania sheets, work out their own designs, and control the decorations themselves. The design is cut on stone, like a chromolithograph, each colour having a separate stone. The colour is sprinkled in powder on the paper after it has received the impression from the stone. Some time ago much alarm was caused at Limoges by lead poisoning from the colours. But now the powdering is done under cover, glass being placed between the face of the workman and the sheet on which he is working in such a way that while he can see perfectly what he is doing there is no danger of his inhaling the powdered colours. A new powder is now being tried which dispenses with the use of lead altogether.

SALE OF LOGWOOD EXTRACT.—Messrs. Robert Lyon and Co., marine salvage brokers, of Cornhill, E.C., will sell, on account of whom it may concern, 1,300 cans of logwood extract, damaged by water, at the Commercial Sale Rooms, Mincing-lane, E.C., on September 8th.

PERSONAL.—An interesting presentation was made to the manager of the Whitwood Chemical Co., Ltd.—Mr. W. Ackroyd Bower—on Tuesday evening last. The presentation took the form of a silver salver and an inkstand given to Mr. and Mrs. Bower by the workmen of the above company on the occasion of their marriage.

A LITTLE MIXED.—Our estimable contemporary, the *Oil and Colourman's Journal*, gives its readers some information this month on the effect of the new American tariff on the English chemical trade. It would seem, however, that it has done more than affect the trade, it has upset chemical nomenclature, for the "Special Contributor" makes "a head official of one of the largest chemical manufacturing companies" say the following:—"Another article which is shipped largely to the United States is bleaching powder—chlorate of lime (*sic*). Under the late tariff this article was admitted free. It is now subject to a duty of 1.5 per cent. (*sic*) per lb." The statement of the duty is even better than the bleaching chlorate, for it takes a lot of "special" to grasp what 1.5th of a "per cent." is. Our worthy contemporary is off the (s)cent. this time. Perhaps if we state the duty as $\frac{1}{600}$ th dollar per lb., as it really is, they will be able to "recover."

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Extracting Gold from Slimes. F. W. Jackson. 18,900. August 16.
Producing Ozone. M. Otto. 18,926. August 16.
Smokeless Furnaces. P. Boimare. 18,950. August 16.
Manufacture of Acetylene Gas. J. R. Wigham. 18,971. August 17.
Aerating Sewage, etc., Filters. J. Guthrie. 18,974. August 17.
Production of Calcium Carbide. H. Maxim and W. H. Graham. 18,989. August 17.
Manufacture of Glass. H. Brook and J. C. Grout. 19,003. August 17.
Apparatus for Manufacture of White Lead. A. H. Eyles. 19,030. August 17.
Crushing Mills. W. H. Coward. 19,031. August 17.
Converting Town's Refuse into Manure. H. S. Jones, of Firm W. P. Thompson and Co. 19,033. August 17.
Electrolytic Apparatus. H. S. Jones, of Firm W. P. Thompson and Co. 19,035. August 17.
Nickel Depositing Vats. J. S. Morrison. 19,037. August 17.
Chemical Boiling-down Pans. W. Astley. 19,077. August 18.
Producing Ammonium Phosphates. F. M. Lyte, O. J. Steinbart, and W. H. Wickham. 19,107. August 18.
Coke Ovens. W. E. Kochs. 19,149. August 19.
Electrolytic White Lead. H. C. Waltereck. 19,179. August 19.
Improved Tanning Process. R. Coady and A. Christen. 19,216. August 19.
Precipitating Tanks. A. Fidler. 19,249. August 20.
Dyeing with Reduced Indigo. J. O. Barlow. 19,269. August 20.
Retorts for Drying or Carbonising Sewage Matters, etc. W. H. Bowers. 19,284. August 20.
Removing and Preventing Boiler Scale. T. and G. H. Swift. 19,344. August 21.
Artificial Leather. A. E. E. Cantley and E. Springborn. 19,356. August 21.

ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

These abstracts are specially prepared for the Chemical Trade Journal, and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.

Improvements in and connected with and Apparatus for the Manufacture or Production of Hydrogen Gas. L. V. Pratis and P. Marengo, both of 35, Via Principe Tommaso, Turin. Eng. Pat. 15,509. June 29, 1897.

The industrial preparation of hydrogen from iron and sulphuric acid has up to now been attended with considerable difficulties, the chief of which were the slow evolution of the gas and the dilute state of the ferrous sulphate solution formed. By the present process these troubles are avoided, since by adding enough dilute vitriol to form a pasty mass of iron, ferrous sulphate and water, the rapid generation of the hydrogen is insured, while the residual mud can be utilized economically for the preparation of copperas or Nordhausen sulphuric acid. For generating the gas it has been found advantageous to use the following proportions: vitriol of 50°B. about 6 parts, and 5 parts each of water and subdivided iron. In recovering the bye-products enough water is added to the mud to dissolve the copperas, which is then crystallized out. As an alternative sufficient acid to dissolve the rest of the iron may be added, and the process conducted thenceforth on the usual lines for the manufacture of green vitriol. To obtain Nordhausen acid the residue is dried and roasted. Any metallic iron left in the oxide is separated by sifting. There are eleven figures showing the details of the apparatus employed in the generation and storage of the gas which is intended for a substitute for coal gas, for heating mantles, etc., on the incandescent lighting system.

Improved Means for Manufacturing and Recovering Cyanides, and Apparatus therefor. G. P. Lewis, 2, Florence Villas, Helvetia-road, Catford, and R. A. Cripps, The Laboratory, Hayward's Heath, Sussex. Eng. Pat. 20,883. September 21, 1896.

The cyanides in coal gas are recovered either as sulphocyanide, ferrocyanide, or Prussian blue. The gas is passed through a scrubber containing a washing liquor prepared according to the salt required. For instance, the waste gases from a sulphate of ammonia plant (or else some of the "devil" liquor) are passed into a solution of an alkali in the form of hydrate, thus converting the alkali into sulphide. Some flowers of sulphur are then added, and the liquor exposed to the air for a day or two. When used in the scrubber this liquid extracts the cyanides from the gas, forming a sulphocyanide. There must be a small percentage of oxygen in the gas to be treated. The "devil" water should be as free from ammonia as possible. To produce ferrocyanide an alkaline solution containing ferrous sulphide in suspension is used.

Such a scrubbing liquor is prepared thus: Scrap iron is dissolved in acid, and the solution treated with "waste gases" or "devil" liquor to precipitate sulphide of iron, to this a solution of soda, potash, or ammonia is added, and the whole introduced into the scrubber.

By employing crude ammoniacal liquor containing sulphide of iron in suspension, ammonium ferrocyanide is formed. This can be run through the ammonia stills, where the lime treatment gives calcium ferrocyanide, which is separated and treated for the recovery of Prussian blue, according to patent 5184/96.

There are three drawings of the scrubber, which is vertical, and very similar to an ammonia still of the column type, only each tray is provided with a number of screw propellers, which keep the contents agitated.

Process for Producing Peat Charcoal by Means of an Electric Current. C. A. Jensen, 77, Chancery-lane, W.C. (communicated by P. Jebson, Dale, near Bruvik, Norway). Eng. Pat. 15,513. June 29, 1897.

The peat is inserted as a resistance in an electric circuit. The peat should be as dry as possible, and should by preference be submitted to the action of the current in comparatively thin layers under pressure. This may be done by the aid of a roller machine or press, the pistons of which carry the conducting wires or the poles respectively. By a suitable arrangement of the plant, the process can be made continuous and automatic, so as to require a minimum of manual labour.

A New Manufacture of Soaps and Process therefor. A. Jolles, I Schottenring, No. 4, Vienna, Austria. Eng. Pat. 15,156. June 24, 1897.

Asbestos or Kieselgur is mixed with the soap, or else a mixture of both, with soapstone, meerschaum, and fuller's earth, is used. In preparing the soap, to every 100 parts of melted fat 55 parts of 38° lye is added, with constant stirring. In about 15 minutes the silicate mixture suspended in an alkaline solution is added, and thoroughly incorporated. Several advantages are claimed for the soap so prepared, one prominent feature being the absence of all lumps or granular appearance.

THE SONG OF THE IRWELL.

A CORRESPONDENT writing to the *Manchester City News* sends the following verses on the Irwell, which appeared in 1877. Their author is unknown, but they are as interesting to-day as then, and perhaps truer, the Joint Rivers Committee notwithstanding:—

I flow by tainted, noisome spots,
A dark and deadly river;
Foul gases my forget-me-nots,
Which haunt the air for ever.
I grow, I glide, I slip, I slide,
I mock your poor endeavour;
For men may write, and men may talk,
But I reek on for ever.

I reek with all my might and main,
Of plague and death the brewer;
With here and there a nasty drain,
And here and there a sewer.
By fetid bank, impure and rank,
I swirl, a loathsome river;
For men may write, and men may talk,
But I'll reek on for ever.

I grew, I glode, I slipped, I slode,
My pride I left behind me;
I left it in my pure abode—
Now take me as you find me.
For black as ink, from many a sink,
I roll, a poisonous river;
And men may write, and men may talk,
But I'll reek on for ever.

And thus my vengeance, still I seek
Foul drain, and not a river;
My breath is strong, though I am weak,
Death floats on me for ever.
You still may fight, or may unite
To use your joint endeavour;
But I'll be "boss" in spite of Cross,
And poison you for ever.

It is doubtful who Cross was, but there is now a two-edged innuendo in the "Joint endeavour," which is more telling than parodist ever intended.

SUGGESTIONS ON SAFE PETROLEUM AND LAMPS.

AT the request of the Chairman of the Select Committee on Petroleum the Lamp and Stove Trade Association of the United Kingdom have made the following suggestions for ensuring safety in the use of petroleum oil and lamps, the views being based upon the practical experience of the members who represent almost all the principal lamp and oil firms. In their report they say:—We are of opinion that accidents with the use of petroleum lamps are due not so much to any radical defects or errors in construction in the lamps themselves, nor yet to the quality of the oil generally in use, as to carelessness on the part of the users, with which may be coupled drunkenness, uncleanness, and ignorance. For all practical purposes it may be assumed that the lamps in general use in this country, if used, as they are intended to be used, are safe.

Attention must, therefore, be directed to the question of how best to meet the carelessness of the public in the use of lamps, which carelessness, we may point out, is equally manifested in the use of matches, candles, gas, etc.

THE FLASH POINT MUST BE RAISED.

As to oil. In the first place, we would suggest that an increase in the present flashing point of the oil to at least 100 degrees Abel test is urgently called for, our opinion being that the flashing point of the oil in use for domestic purposes should be *that to which the temperature of the oil while burning in the lamp will never rise under ordinary circumstances.*

The following facts appear to us to point conclusively to the necessity for such an increase. First: In Scotland and the North of England, where high flashing oils are almost exclusively used, that is, oils having a flashing point of not less than 100 degrees Abel test, there is a comparative immunity from accidents. Statistics prove that the number of accidents reported increases in proportion to the quantity of 73 degrees Abel test oil used. Those portions of the United Kingdom in which this oil is exclusively used show by far the largest number of accidents. The actual relation of fires from mineral oil lamps, to fires from other causes in the chief cities is as follows for the year 1893:—In Glasgow, 1.7 per cent.; in Edinburgh, 1.25 per cent.; in Belfast, 2.17 per cent.; in Dublin, 5.40 per cent.; in Liverpool, 13.24 per cent.; in London, 19.3 per cent.; while in New York, from Dr. Chandler's report, the percentage of total fires due to kerosine, in 1871, was 11 per cent., and in 1869, 18 per cent.—low grade oils being then in general use as against those in 1880, when, as per Dr. Elliott's 1882 report, the oil in general use having a flash point of 100 degrees Abel test, the percentage of fires had fallen to 3 per cent.

Second: The fact of the Government having prohibited, on expert advice, the use of any oil in barracks and naval depôts having a flashing point of less than 105 degrees Abel test. We submit that if such a regulation be necessary or advisable in barracks, where order to a large extent prevails, it is far more necessary in the homes of the poorer classes, where a small lamp is generally the only means of illumination, placed upon a table none too firm, with children about, and in a room, the temperature of which must be often between 70 and 80 degrees Fahr.

The question of the retail supply of both oil and spirit in separate and proper measures was last year prominently brought before your Committee. We venture to emphasize the importance of attention to this. In our own experience, accidents have frequently been caused by the supply of a small quantity of petroleum drawn from a cask or tank into a measure which, having just previously been used for the supply of naphtha or benzoline, has a small quantity of the spirit remaining in it. The most stringent regulations should be made and enforced respecting this, and we would suggest that the vessel used for measuring spirit, for the purpose of sale, should be chained to the cask or tank in which it is kept, which should itself be placed at such a proper distance from the petroleum, and so marked that there should be no possible chance of confusing one with another.

IMPROVEMENTS IN LAMPS.

With regard to lamps, we are of opinion, and our experience proves, that accidents are due to the following causes:

First: The breaking of thin glass reservoirs, so largely in use, through careless handling, and even through the use of a reservoir already in a cracked condition.

Second: The use of too small a wick in a flat wick burner tube.

Third: Want of care in keeping the interior of the burner clean.

Fourth: General ignorance of the public as to the character of petroleum, and the proper use of lamps.

We suggest that to meet the danger due to the first cause, namely, the breaking of the glass reservoir, that the use of very fragile glass reservoirs be prohibited, and that all glass reservoirs sold should be of a certain strength, that is, that their weight should bear a certain relation to their oil capacity. Our suggestion is that the proportion of the weight to the capacity should be in the ratio of one pound of glass to one pint of oil.

We do not advocate the total abolition of glass reservoirs, as we are of opinion that for many reasons they are to be preferred, among which may be mentioned the coolness of the oil, and the ability to see the amount of oil in the reservoir. The metal reservoir, while undoubtedly from some points of view the safer, increases the heat of the oil considerably, as shown by published statistics, and unless strongly made does not possess the advantages claimed for it.

It is of great importance that in the construction of table lamps, for general use by the public, the base should be larger in diameter than the reservoir, and should bear in weight a reasonable proportion to the total height of the lamp.

STANDARD WICK TUBES AND WICKS.

With regard to cause No. 2, namely, the use of too small a wick in a flat wick burner, there is at present a considerable divergence between the wick tubes and the burners of the various makers, although all are professedly of the same size. The result is serious complication, and the insertion, frequently by careless or ignorant persons, of a wrong size wick into a given make of burner. This matter has received the very serious consideration of this Association, and the members have agreed to henceforward adopt standard gauges for wick tubes of the principal flat wick burners made, with the object of avoiding all such complications in future. We suggest that the standard gauges adopted should be the standard gauges of the country, and that all lamps with flat wicks sold in this country, should be required to conform to these sizes, while, further, as a very important point, we suggest that it should be compulsory that the winder of every flat wick burner sold in this country should be clearly stamped with the size of the wick to be used in it. In illustration of the importance of the above, we may point out that should a $\frac{3}{4}$ -inch wick be inserted in a 1-inch burner wick tube, a considerable space will be left unfilled, and direct communication be provided between the flame of the burner and the oil.

In connection with the foregoing we further suggest that all wick sold for flat wick burners should be sold in lengths of not more than 10 inches, each length being clearly marked with the size, so that the purchaser can himself see that the wick sold to him corresponds with the size marked on the winder of the burner.

THE DANGER OF USING A WRONG SIZED WICK.

An accident recently occurred at Broughton Bridge entirely owing to this cause. A wick, $\frac{3}{8}$ inch in width, was used in a lamp which was intended to burn with a wick $1\frac{1}{16}$ inch wide. The light was turned low, and the burner heating thereby, an undue amount of vapour was formed in the container, which communicating through the space in the wick tube with the light took fire. In this case the coroner stated to the jury that before coming to the inquest he felt it desirable that a recommendation should be made to the Home Office with a view to legislative interference in the construction of lamps, but in this particular case the accident seemed to have arisen not from any defect in the construction of the lamp but simply from an oversight (carelessness) on the part of those who were using it.

[It should be added that the oil used was "Royal Daylight" with a flash point of about 76° Abel Test, hence the formation of the "undue amount of vapour." Had 100° test oil been used no danger would have been incurred by the "carelessness" referred to.—Editor C. T. J.]

The lengthened wick case extending into the reservoir, to which a great deal of reference has been made during the course of the present inquiry, is a principle which has been well known for the last 25 years to the trade, and has been used more or less at various times. Under certain circumstances it may appear to be a useful precaution, but experience proves that it has been of little actual value. It should be borne in mind that its use greatly increases the degree of heat imparted to the oil, besides interfering with the illuminating power of the lamp. If the tube be attached to the burner of the lamp the difficulty of re-wicking presents itself, while if arranged so that it can be removed for the purpose of re-wicking, it would in many cases be left off by the public, as our experience proves has been done in numbers of instances.

We do not attach much importance to the construction of lamps in such a way as to prevent any oil escaping should the lamp be upset. Practical experience shows that accidents from the mere dripping through the burner or feed cap of the oil when the lamp is upset are of extremely rare occurrence.

THE DANGER IS IN THE OIL, NOT THE LAMP.

In any ordinary lamp, if it be upset, the oil will escape so slowly that no harm can be done before the lamp can be replaced, while if the lamp be properly constructed, in such a way that no undue measure of heat shall be communicated to the oil from the burner, the oil so escaping will not be heated to such a temperature as to take fire or be in any way dangerous. The danger from the upsetting of such a lamp is in the breaking of the reservoir, and the consequent splashing about of unduly heated oil, *flashing at a low temperature*, coupled with the ignition of the superabundance of wick often found in the lamp.

We further suggest that in the construction of the burners, solid drawn, braised, or properly folded wick tubes should be used, and we very strongly recommend that all wick tubes should be well soldered

into the burners, and not as is now the case with many burners, merely fixed into their places by the bulging of the metal. We also consider that the attaching of the burner of the lamp to the reservoir by means of a screw collar is preferable to a plug, plug and lock, or bayonet collar. We are of opinion that no radical alteration is required in the present round wick burners in use in this country. With regard to cause No. 3, want of cleanliness in the burners, the experience of this Association proves that the necessity for scrupulous cleanliness in the use of all petroleum burners is by no means as fully recognised as it should be. Unless the air spaces in the burner are kept perfectly clear and free from dust, charred wick, &c., it is impossible for any burner, however perfectly constructed, to burn safely or satisfactorily. We believe it to be of the greatest importance that the public should be enlightened, as far as possible, on these points.

THE PUBLIC WANT ENLIGHTENING.

With regard to cause No. 4, we are convinced from a very long experience and from investigations which we have made into the cause of a large number of accidents appearing in the daily press, that the ignorance of the public as to the character of petroleum, and as to the way in which a lamp should be used, is accountable for a very large proportion of the accidents occurring, and we suggest to the Committee the advisability of publishing and issuing broadcast to the public, if possible, such authoritative recommendations as shall tend to the removal of such ignorance.

The Association offer their services to the Committee in the drawing up of such particulars, and will also be pleased to undertake the free distribution of such statements to the public through the medium of the retail trade, without a copy of which we submit no lamp ought to be sold.

The foregoing suggestions on the subject of lamps have been prepared with reference to those sold for use in the United Kingdom. In the export trade, English makers and dealers are face to face with foreign competition, in which, were some of the above regulations enforced, they would be placed at an unfair disadvantage.

THE IMPROVEMENT OF THE OIL IS SUPERLATIVE.

In conclusion, we may say that in our view no regulations as to lamps and no alteration in their present construction can result in materially lessening the number of accidents unless there is an alteration in the present flashing point of the oil. Many of the members of this Association have been in the trade for 25 years, and we cannot but recognise the fact that the number of accidents is much larger than it was 15 years ago. We strongly believe this to be due to the alteration in the flashing point of the oil, and we believe that oil flashing at 100 degrees Abel test would not cost one penny per gallon more than the present 73 degrees flashing oil, would burn equally as well, and would be far safer.

THE KENTISH COALFIELD.

LORD De L'Isle and Dudley presided over the statutory meeting of the Kent Coal Exploration Company, held last week in London.

Mr. Cousins, the manager, said that, though a comparatively short time had elapsed since the undertaking was formed, very considerable progress had been made in exploring. The Kent coalfields were now being generally recognised as an established fact. Since the undertaking was formed the directors had entered into very large negotiations with county landowners, with successful results.

Professor Boyd Dawkins, speaking as a geological expert who had spent a considerable number of years in studying the problem of coal in Kent, said he believed in his opinion as to the value of the coal to be found there to the extent of investing a considerable sum in the company. Their position was simply this. The owners of land were co-operating with the owners of money, to the mutual advantage of both. All the arrangements which had hitherto been made had been carried out in the light of the fullest and most complete scientific investigation. Dealing with the value of the coalfields, he said he looked upon the eighteen or twenty feet of workable coal proved at Dover as a small fraction of the probable value of the fields which lay beneath the newer rocks in Kent. They had, in his opinion, simply touched the surface of those concealed fields which lay between Belgium and France on the one hand, and Somerset and South Wales on the other. As they were a commercial company, it would be folly to publish generally the results of the exploration work. They had been working on this principle, and had placed the company in a most admirable position. In northern France experimental boring had extended the range of the coalfields upwards of 90 miles westward from the place at which they were originally proved, and he took it that the result of the company's exploration would inevitably be this—that they would define and prove the range westward of those coalfields, to the great advantage of the company and the commercial benefit of Kent and the South of England generally.

Reports of Companies.

FISH OIL AND GUANO SYNDICATE, LTD.

IN the embryo days of this company we referred favourably to its possibilities (No. 493), while the following history of its progress contains many interesting items of industrial information.

Lord Lurgan, addressing the shareholders at the statutory meeting held in Dublin on Monday, said—I am glad to see so many shareholders here to-day, as, although it is by no means a universal custom or obligatory on the part of a chairman to make any full statement, at the statutory meeting of a company, I think it much better that the directors should take the shareholders into their confidence. I therefore propose to refer to certain details, which I think I can safely say will be of interest to you all. Possibly some of you may be inclined to say, "What have you done within the past four months?" I reply, "We have done a good deal," and, perhaps, if you will kindly listen to the few remarks which I propose to make, you will agree with me in this. In the first place, the directors, during the four months which have elapsed since the registration of the company, have been making themselves as intimate as they could with the details of the patents and the advantages to be obtained from them. Of course, you all know that the process of extracting oil and guano from fish is a very old one, and, therefore, we would not have thought of purchasing Mr. Stanley's patents unless we had come to the conclusion that by their means the existing process could be extended, and that they would prove of great value. In the old system, which is largely used in America, Sweden, and other countries, the fish is treated with expensive machinery, but the guano produced contains a large percentage of oil which cannot be eliminated, thus rendering the product of less value, for the reason that the guano will not easily affiliate with the soil and decompose as it should; while, on the other hand, the oil secured is not only less in quantity than in Mr. Stanley's process, but is impregnated with the blood of the fish, rendering the oils objectionable, and restricting their uses almost exclusively to leather dressing. Under Mr. Stanley's process the fish is thoroughly cooked, practically all the oil is extracted from the guano, while a large percentage of the glutinous substance of the fish is retained in the oil, which is thereby rendered of greater value. The guano produced is found to be almost free from oil, and to contain a larger percentage of ammonia than any other. You are doubtless aware that the company owns works situate at Allerton, near Willesden Junction, on the London and North-Western line. During the past four months we have had many tests of our process there, and have invited to them every person we could think of who was interested in fish-oil guano, as well, also, as any person whom we thought likely to pick holes in our process. These demonstrations have been largely attended. People have come to them from every part of the world, and all, including the scientific gentlemen present, have been unanimous in speaking in the very highest terms of what they saw.

We have purchased from Mr. Stanley the fish-oil works erected by him at Gorleston, near Yarmouth, and to these we attach great importance. They are now being put in order and completed for practical working in time for the herring fishing, which commences in October. Mr. Stanley, the inventor of the patent, is so firmly impressed with what can be done at Gorleston that he offered, if we wished, to lease the works on very favourable terms to the company; but, after due consideration, the directors determined not to accept the offer, as they thought they could do better themselves, and they decided before concluding any deals, to find out whether any further developments could be expected from the patents than those which they were aware of. We accordingly employed a very eminent chemist in London to make some experiments for us, and I may safely say that the result of these experiments is of an almost startling nature.

NEW PRODUCTS FROM THE OIL.

As I do not wish to make any mistakes upon the subject, I shall simply give you the result of some of the letters we have received from him, stating what he can do and what he proposed to do with our oil. In the first place, he has been able to produce a vulcanite which he states is capable of resisting 50,000 volts pressure of electricity, making it invaluable for insulating purposes; and when it is borne in mind that at present vulcanite is only capable of resisting one-tenth of this pressure, and is selling at 3s. 6d. per pound, while we are advised that we can produce it at a very small fraction of this sum, the importance of this discovery alone will be appreciated. The chemist in question further informs us that he had found it impossible to make this vulcanite out of any other fish oil except ours, although he had been trying to do so for years, and this is also a most important matter for us. He also tells us we can manufacture a valuable material for insulating telegraph wires, and that we can manufacture pulleys and wheels which will give 40 times better results than any other material. Specimens of these are on the table before me, and I invite you to inspect them after the meeting. He has

manufactured embossed panels, flooring, and a good imitation leather; and, in fact, there are 100 uses to which this process can be applied. By reason, also, of the quality of our oil when chemically treated the material manufactured proves to be absolutely non-inflammable—it will only char if burnt.

Lancaster-Walton takes two years to manufacture. We are advised that we can manufacture the same material, of a better quality, and at infinitely smaller cost, in as many weeks. With reference to the sale of our patents, we are in a position to close the sale of the English rights immediately, but, considering what I have told you, I think you will admit that we are justified in holding our hands at present. We believe we have got a good thing, and we wish to make a good thing out of it. There is another syndicate which is anxious to come to terms with us, but we think it better not to be in too great a hurry, and that, before deciding on anything definite, it will be wiser to wait and see how things progress. That applies to the English rights.

In regard to the Swedish rights, negotiations are now proceeding with the representative of a combination of English and Swedish Companies producing between them, I understand, something like 80 per cent. of the entire fish oil and guano made in Sweden. It is suggested that our patents shall be taken over by an English syndicate, which will introduce the process into the Swedish factories, and it is proposed that a very substantial royalty should be paid to the syndicate which, if we take the existing output from Sweden as a basis, would amount to an exceedingly large annual sum. The gentlemen that have the matter in hand are now in Sweden with the object of carrying on the negotiations. They are responsible men in the trade, and their proposal has the cordial support of this company, which, naturally, will be so largely benefited by the transaction. Negotiations are also proceeding with responsible persons for the sale of the rights for South Africa, and the directors are informed that after the holidays these negotiations will take a practical form. The American and Canadian rights are very important, and involve a large amount. In the month of May last, one of your directors visited New York, where negotiations for the sale of the rights for the American continent were opened with some of the strongest financial people in New York. These negotiations led to a thorough investigation of the system now in use in the United States, where it was found that the guano produced was at a disadvantage by reason of the oil therein, which I have previously referred to. This matter has been thoroughly explained to the proposed purchasers, and at their request Mr. Stanley, the inventor, sailed for the United States on Saturday last, having with him a complete working model of the company's machinery, to enable him to give a practical demonstration of the process there. This model was carefully tested before it left this country, and was found to be perfect in every respect, the oil produced from the fish treated by it being valued at a very high sum. Your directors look forward to the sale of these very valuable rights in the near future at a price that will give a handsome return to this company.

OUTLOOK ON THE PACIFIC COAST.

When it is borne in mind that the refuse and edible fish on the Pacific coast, including British Columbia, amounts to 100,000 tons per annum, the use of this process, which is by far the most economical known, must naturally be very extensive, and entail the erection of a large number of factories on the Atlantic and Pacific coastboards. I may mention with reference to our Yarmouth works, that deputations from Sweden, Hull, Grimsby, and other places, have arranged to come and inspect them as soon as the fishing season commences there. I understand that a large firm in Hull had in the beginning of the year determined to largely extend its guano works, which are carried on according to the existing system; but, having met Mr. Stanley, and learned the details of his process, it has now decided not to proceed further with the matter until it can inspect the working of his process at Yarmouth with the view of ultimately adopting it itself.

Dr. Barnard asked about the Jamaica company?

The Chairman: We withdrew from that. We found that to have gone on with it on the terms proposed to us would have involved considerable expenditure, and we did not think we were in a position to take part in a deal which would have involved such an expenditure.

Mr. E. Dilton moved a vote of thanks to the chairman and directors. He mentioned that some of the shareholders had been anxious to know what had been done, but from Lord Lurgan's very full and clear statement they must feel that good work had been achieved, and their chairman and directors deserved their hearty thanks.

Mr. Crookshank seconded the motion, which was unanimously passed.

THE ALUMINIUM CO., LIMITED.

The report of the directors for the twelve months ended June 30th, states that, while the result of the year's trading is not so satisfactory as last year, they still have every reason to feel entire confidence in the present position and future prospects of the Company. The accounts show a gross profit of £10,531. for the financial year. This sum, to-

gether with the sum brought forward from last year, and after providing for debenture interest of £4,739., and all other fixed charges, leaves a balance available for dividend of £7,447. Out of this the directors recommend the payment of a dividend of 10 per cent. for the year on the "A" shares, which will absorb £6,000., leaving a balance of £1,447. The transactions of last year enabled a large sum to be written off both the works and patents, and also the formation of a large reserve fund in shares of other companies; the directors, therefore, are of opinion that no further amount need be written off this year. The old issue of £100,000. six per cent. debentures has been paid off, and in their place £90,000. four-and-a-quarter per cent. first mortgage debenture stock has been issued. Deducting the premium received on the issue of this debenture stock, viz., £2,700., from the total expenses of the issue, £3,857., there remains the sum of £1,157., which the directors propose to write off from the balance of £1,447. above-mentioned.

The business at Oldbury has suffered materially this year, owing to what the directors believe is

IMPROPER COMPETITION,

and suits have been instituted in Germany to restrict the manufacture of sodium carried on there by what is confidently expected will prove to be an infringement of the Castner sodium process. Upon the successful termination of these suits heavy damages may be secured, and the Oldbury business will be restored, it is believed, to its former level. In any event, certain measures are now being taken in respect to the Company's manufacture of sodium, which, if realised, will, irrespective of the result of the litigation in Germany, restore the profits derived from this branch of the Company's business to their former figures.

ELECTRO CHEMICAL COMPANIES.

The various undertakings in which the Company is interested as the holder of shares are all progressing satisfactorily. The works of the Castner-Kellner Alkali Company, Limited, are now in operation, and the shares command a high premium, though standing in the books of the Company at par value. The dividends which may be paid by the Castner-Kellner Alkali Company, Limited, will considerably increase the income of this Company in future years. The works being erected by the Mathieson Alkali Company at Niagara Falls are expected to be finished and started in October. The payment of the minimum royalty of £4,000. per annum by the Mathieson Alkali Company has now commenced to run. The works of the Niagara Electro Chemical Company are also in successful operation, and if present indications continue that Company will be able to pay a substantial dividend at the close of their first full financial year.

CO-OPERATIVE WHOLESALE SOCIETY, LIMITED.—The directors of this society, in their report for the quarter ended June 26, state that the sales for the three months amount to £2,824,586.—an increase of £201,701., or 7½% on the corresponding period of last year. The net profit for the quarter, after providing for all expenses of production and distribution, interest on capital, and depreciation of property, according to rule, amounts to £36,802. 1s. 7d., which it is proposed to distribute as follows:—Dividend to members on sales at 3d. in the pound, £31,427. 4s. 9d.; dividend to non-members at 1½d. in the pound, £247. 1s.; writing off buildings' account, £4,270. 18s. 1d.; reserve fund, £856. 17s. 9d. In the banking department the turnover for the three months amounts to £10,681,199. 0s. 5d., and the profit disposable to £2,273. 1s. 11d. Owing to the adoption of the system of half-yearly stocktaking, the profits in some of the Society's productive departments have not been ascertained, but the supplies for the quarter show the following increases compared with the corresponding period of last year:—Crumpsall biscuit works, 7½%; Leicester shoe works, 15½%; Heckmondwike shoe works, 20½%; Irlam soap works, 14%; Batley woollen mill, 43½%; Leeds clothing factory, 22½%; clothing factory (Lower Broughton), 38½%; Dunston flour mill, 10½%; Hartlepool lard factory, 142½%; Middleton preserve works, 13½%; and the printing department, 59½%. The only falling off is shown in the cabinet factory at Lower Broughton, where a decrease of 10½% is recorded. The result of the quarter's working in the shipping department, after paying the usual expenses and charges for repairs, shows a gross profit of £2,321. 9s. The charges for interest and depreciation amount to £1,535. 13s. 6d., leaving a net profit of £785. 15s. 6d. The committee submit a scheme of superannuation for the Society's employés. It is optional for present employés to join the scheme, but compulsory to all who may enter the service of the Society after the scheme has been established. It is also possible for the employés of retail shareholding societies to join the fund. It is proposed to place at the disposal of the committee a sum of £3,000., to be distributed as may be deemed advisable among the distressed wives and families of the men thrown out of work in consequence of the dispute in the engineering trade. The committee report that they have carefully considered the question of commencing the manufacture of paper, in compliance with a resolution passed at a recent meeting, but they cannot at present recommend the shareholders to take any action in this direction.

THE MANCHESTER SEWAGE PROBLEM.

ADOPTION OF THE CULVERT SCHEME.

AT the meeting of the Manchester City Council on Wednesday Councillor Saxon, vice-chairman of the Rivers Committee, moved that the minutes and reports of that body be adopted. After apologising for the absence of the chairman (Alderman Thompson), who he said was in agreement with the other members of the Committee with regard to both the plans and the scheme, Mr. Saxon went on to say that it was necessary to use all speed in getting the scheme through in view of the action of the Mersey and Irwell Joint Committee. The approval of the Council was desired to a scheme which involved the making of a culvert sixteen miles long, extending from the works at Daythulme to the estuary of the river Mersey. The scheme had been well considered, and had been before the Committee for some months past, so that it was not a new and hastily arrived at scheme. Plans for a culvert similar to the one now proposed had been passed at the instance of the Glasgow Corporation, whose effluent would be discharged into the Clyde. It was not proposed to do as other authorities in the neighbourhood of the estuary of the Mersey did, namely, discharge crude sewage into the Mersey. If they proposed to do that they would undoubtedly be opposed, and Parliament would very likely not give them permission to do it. The new scheme was absolutely necessary in view of the high standard of purity required by the Mersey and Irwell Joint Committee. It must be borne in mind that Manchester sewage was of enormous quantity and of very bad quality indeed as compared with other towns and authorities. If this was not borne in mind mistakes might arise, because many persons would think that what was successful with other authorities would be successful here. That was not so, as they were not on fours with other authorities in this respect. For a lengthy period other systems had been tried, but they had all proved very costly, and there had been a great deal of uncertainty in their process and final success. The Committee had no confidence in artificial filtration, and although some members were inclined to still further experiment in this direction even they were not inclined to commit themselves to that particular system. The cost and maintenance of this culvert would be much less than the cost of artificial filtration would be, and it was on that ground that the present scheme was submitted. The cost, £258,000, might seem a large sum, but in stating that sum the Committee had taken into consideration the wayleaves and easements which would be required along the route, but they had not taken into account the law and parliamentary expenses. Their reasons for adopting the scheme was that it was definite and comprehensive, and the cost could be gauged within reasonable limits. They believed its maintenance and its annual cost would be comparatively small, but their greatest reason for recommending the scheme was that it took them from the jurisdiction of the Mersey and Irwell Joint Committee, and consequently freed them from the excessive standard of purity required by that body. Whatever system was adopted was bound to be an expensive matter, and therefore the Committee were resolved that instead of tinkering and speculating any longer with the various schemes which were submitted to them almost weekly, they would go in straight and strong for this culvert. (Hear, hear.) In it they saw a clear and straight way out of their difficulties, and they believed it would be a proper and complete solution of their past troubles. (Hear, hear.) The Committee were unanimous in recommending the scheme to the Council.

Alderman M'Dougall seconded the proposition, and spoke of the difficulties which were experienced in obtaining sufficient land for dealing with the sewage of a large city by land filtration. In discussing the question the members of the Committee had strongly expressed their views, but they had all been actuated by a common object, and had been most harmonious in their disagreements. In the end they had unanimously agreed to recommend the adoption of the culvert scheme rather than wait any longer for the results of artificial filtration. He had received a letter that morning from Councillor Andrews, who was unable to be present. Mr. Andrews was originally opposed not only to artificial filtration, but also to the culvert scheme, but now he expressed himself in hearty approval of the latter, and added that he was satisfied, considering the exceptional character of the sewage, that this was the only certain method of dealing with the effluent. The present effluent, Alderman M'Dougall assured the Council, was not putrescible to any serious extent, and was perfectly fit to go not only into a tidal stream but into any running stream.

Alderman Griffin, in supporting the scheme, said he had always been in favour of the conduit scheme because of its finality. He could see no possible objection to the present proposal.

OPPOSITION TO THE SCHEME.

Councillor Trevor opposed the scheme. He said he did not feel at all comfortable in voting for the expenditure of such a large sum of money on a scheme which he was sure would not be satisfactory when completed. He thought they ought to go in for something more final, and it would be a good thing if the Corporation would take the first

move in the matter of making the sewage question a national subject rather than a local one. In his opinion it would be better if they tried to arrange with other local authorities in making a great trunk sewer to carry sewage into the sea. That would give them a finality in their expenditure, but in connection with the present scheme any Bill they might promote would meet with all sort of opposition.

AN INCREASED EXPENDITURE FEARED.

Alderman Southern remarked that he thought the Rivers Committee as a whole, when they brought the report before the Council, should face in a more candid and open way the difficulties of carrying out their proposals. They also ought to have sought a conference with those whose interests would be affected by the scheme. The alderman added that the ratepayers desired to know the beginning and end of the expenditure. At present they did not know that. Large sums would have to be paid for compensation to persons deprived of their water rights, and it must not be expected that the scheme could be carried out for anything like the sum stated. The Rivers Committee, however, must take the responsibility and face the Parliamentary opposition which they were sure to have.

Alderman Walton Smith expressed his pleasure with the able manner in which the scheme had been placed before the Council, and remarked upon the anxious care which the Committee had bestowed upon the question for years past. There were some people who thought it could be disposed of in an easy, off-handed manner, but when constantly changing difficulties had to be faced, and those difficulties had to be met in various ways, it was not so easy to deal with them as outsiders imagined. The Committee had come to the conclusion that the culvert scheme was the best scheme they could submit to the Council, and he was sure that if it were agreed to, not only Warrington, but the other authorities along the route, would be treated in the best possible way.

Alderman Hopkinson whilst not acquiescing in the recommendation of the Rivers Committee, was not prepared to inaugurate an active opposition to the proposal of the prosecution of an alternative. He was absolutely unconvinced either as to the necessity or the desirability of the suggested solution of the acknowledged difficulties of the Rivers Committee.

Mr. H. Grimshaw, in a maiden speech, said it was impossible to put their effluent into the canal, probably the culvert was the best way out of the difficulty. The great pity of it would be, possibly, that they might not be allowed to send their sludge down along with the sewage. If Parliament would give them power to run their sewage down the culvert it would be an immense saving to Manchester, because they would have solved the sewage and the sludge difficulty, which they would not do if they were obliged to purify the water sent down the culvert. He had found, as a chemist, that if they made the proposed culvert, in three or four years from now, when they came to analyse what they sent down, and also analysed what was still in the Ship Canal, sent into it by towns above, they might find that they were sending down water two or three times as pure as that which was in the canal. He desired to enter his protest against what was generally considered by chemical authorities the extremely severe and arbitrary way in which the Joint Committee were pressing their standards of purity, which they knew nothing about.

Alderman Lloyd was of opinion that the proposed scheme was the best way at present out of a huge difficulty.

Sir J. J. Harwood said he had waited for something to be said which would enable him to vote with the Committee, because it was the duty of members of the Council to support the committees in their serious and responsible deliberations if they could do so. What, however, presented itself to his mind was this. There was no man in England who had a greater respect for Sir Henry Roscoe than he had, but it had always seemed strange to him—and he had said so before in that chamber—that the man who was advising the Council to comply with the requirements of the Joint Committee was the same person under whose direction those requirements were formulated. (Hear, hear.) It was a manifestly inconsistent position. Who was it who opposed the putting of the effluent into the Ship Canal? He did not know, but one thing was quite certain—viz., that the water in the canal was very much worse than the effluent it was suggested they should put into it. When the effluent, just as it was to-day, was put into the canal, it made the volume of water in the canal very much better than it was without it. That could not be disputed. Why, therefore, should they have to spend all this money to keep it out? He felt the responsibility of his representative position in the matter. Who would be the owners of the Ship Canal in the future, and who would have the control and the responsibility of it? Only one answer could be given to that question, and he should like speakers who followed him to say by what authority they were prevented from putting this water, at so much less cost than was suggested to them that morning into the canal. He could not help thinking that some means might be devised for doing as he suggested, because he was told by responsible persons, and he was also told by his own sense of smell, that their effluent, in the present condition of the canal, improved it. They could not make the canal much worse. He was not anxious to increase the difficulties of the Committee or to

embarrass them. He wished to support them if he could see his way to do so.

Mr. Dreyfus, speaking as a chemist, and carefully weighing every word that had been spoken on the question, said that the Joint Committee were not justified in laying down such a standard of purity as they had done. Mr. Alderman M'Dougall had told them that if their effluent were allowed to flow into a running stream there would be no objection to it, and that no secondary decomposition could be proved against it. Unfortunately they had run the effluent into a part of the canal which was nearly stagnant, and the question was whether the decomposition was due to effluent or to the mass of crude sewage which was run into the canal from the higher reaches of the river. He urged that it was not just for the Joint Committee to demand immediate perfection, but that the Corporation must be given time to prove their methods and to show their good intentions. In that case there would be a chance of the Rivers Committee producing, in time, an effluent which might be satisfactory. The Council had before them the alternative of fighting the Joint Committee or of accepting the recommendations of the Rivers Committee, and he thought they should adopt the latter.

AN AMENDMENT NOT SECONDED.

Councillor Batty moved an amendment that the scheme should be referred back to the Rivers Committee for further consideration with a recommendation that the Council should be told the cost of turning the effluent into Woolston Weir.

The amendment was not seconded, and consequently came to nothing.

Mr. N. Bradley contended that it was utterly impossible to work under the restrictions of the Mersey and Irwell Committee, which was always trying to do something impossible all round. He urged the Council to adopt the culvert scheme, and to have nothing to do with filtration, which would cost them £40,000, a year more. He also advised them not to shorten the culvert, and so bring it within the jurisdiction of the Mersey and Irwell Committee.

Councillor Richards did not anticipate that Liverpool or Widnes could offer any objection to the proposed scheme.

Mr. Richards said the Council were obliged to carry out the behests of the Joint Committee. The scheme proposed seemed to him as good a one as could be devised.

The resolution was carried all but unanimously.

On the motion of Mr. Saxon, the Rivers Committee were authorised to take all the measures necessary to carry the recommendation into effect, including the promotion of a Bill in Parliament under the direction of that Committee.

The Town Clerk was authorised to take all necessary steps under the Borough Funds Act in relation to the proposed bill in Parliament.

Trade Notes.

A PETROLEUM SHIP BLOWN UP.—The British tank steamer *Attala*, of Middlesbrough, plying from Philadelphia to Aarhus with petroleum, went ashore last week on the Nordrer Roennen, off the island of Læsø, in Cattegat, and caught fire. The shock of the impact as the vessel touched the ground caused one of the petroleum receptacles to burst, and a stream of oil flowed into the stoking-room. The crew of twenty-four men at once put off, and reached the shore in safety. About a quarter of an hour after they had left the ship a loud explosion was heard, and a huge pillar of flame rose into the air.

FIRE IN SOUTHWARK.—A fire, which at one time threatened to envelop a whole block of buildings, occurred soon after ten o'clock on Saturday night last on the premises of Messrs. D. Hill and Sons, of Southwark-street. The warehouse is a large wholesale chemists and druggists' factory, and the conflagration was largely augmented by an explosion, which occurred soon after the fire broke out. The Southwark division of the Fire Brigade was quickly on the scene, but, owing to the combustible nature of the goods stored in the third floor of the warehouse, their efforts were for some time fruitless. By about one o'clock the firemen had subdued the flames sufficiently to insure the safety of the neighbouring buildings.

FIRE AT A BURY CHEMICAL WORKS.—Shortly before eight o'clock on Saturday morning, a cotton operative, whilst passing over Bury Bridge, saw flames bursting through the roof of Messrs. Preston's chemical works on Bury Ground. He at once raised an alarm, and a telephone message was despatched to the fire station. The response was prompt, but when the brigade arrived at the scene the flames had a firm hold of the building, which was of two storeys. A good supply of water was obtained from the river, but the building was gutted. The fire spread to Messrs. Duckworth's hat-works adjoining, but owing to the efforts of the brigade comparatively little damage was done. The fire, however, got into a storeroom, containing about a thousand partly finished hats, and in addition the contents of the machine-room and a storeroom were damaged. The total amount of damage done by the fire is estimated at about £1,500., and is covered by insurance.

THE EXPLOSIVES COMBINE.—An agreement has been concluded between the leading European and American explosives manufacturers. Its provisions include one for the abstention of American manufacturers from exporting to any parts of South Africa. The parties to the agreement are the leading American dynamite companies and the Nobel Dynamite Trust Company, Limited, of London.

THE PRODUCTION OF ALUMINIUM.—It has only been a few years, comparatively, since aluminium was practically classed among the precious metals, having a value nearly, if not quite, that of gold. Indeed, until about 1858 it was almost exclusively a laboratory product, and it was not until the introduction of electrical appliances that it became possible to regard the metal as one to be used for general purposes. Since cheaper and better methods of producing aluminium have been employed, the output has steadily and rapidly increased, until now it is confidently stated by some that before another year is gone only three commercial metals—iron, lead, zinc—will be rated at a cheaper price. Practically all the aluminium in the world's market, up to and including 1895, was produced in France, Switzerland, and the United States, the production being about 7,000 pounds daily. Each of these, as well as Great Britain, added largely to their aluminium plants in 1896, with the result that the output reached 14,674 pounds daily. According to Mr. E. Germain, the United States Consul at Zurich, in a recent Consular report, the producers of this useful metal abroad have added largely to their plants. The additions to the works at Neuhausen, in Switzerland, when completed, he says, will add about 5,940 pounds to the daily production. He also states that a German-American syndicate has planned the erection of works for the manufacture of aluminium at the waterfalls of Sarptoss, in Norway to be ready for operation by the beginning of next year, and that these works are to have a capacity of some 6,000 pounds daily. Consul Germain estimates that with the additions in Switzerland, the new plant in Norway, and the increased capacity of the Niagara Falls plant, the output of aluminium in 1898 will average 42,460 pounds daily, or about six times the amount produced in 1895.

Market Reports.

TAR AND AMMONIA PRODUCTS.

There is no change in benzols, prices remaining as last quoted. Crude carboic acid is decidedly cheaper, and is now quoted at 1s. 10d. to 1s. 11d. Crystals (40%) are still firm at 7½d. Naphthalen call for but little comment, as prices and position remain as last quoted. Anthracene is lower, but creosote keeps steady at the advance. Pitch is a little better at 20s. f.o.b. East Coast.

Sulphate of ammonia is firm, and in fairly good demand. The forward section is rather quiet, but considerable business has been done on spot at advanced prices. Closing values are: Beckton £7. 15s., London outside makes £7. 15s., Liverpool £7. 15s., Hull £7. 15s., and Leith £7. 15s. to £7. 16s. 3d.

MISCELLANEOUS CHEMICAL MARKET.

Business generally during the past week has been fairly satisfactory, but there are few changes to report. Bleaching powder remains steady and in good demand at former prices, viz., £6 7s. 6d., rails, and £6. 12s. 6d., f.o.b. Caustic soda has been advanced 10s. per ton, and now stands £7. 10s. for 70's and £6. 10s. for 60's. Saltcake without change. Nitrate of soda is steadily held, and to-day's price is £7. 7s. 6d. to £7. 15s., according to quality. Flake litharge firm at £16. Foreign white acetate of lead slow of sale—prices quoted £22. 7s. 6d. to £22. 10s. c.i.f. Nitrate of lead £19. Acetic acids dull—40% is offered at £9. and 25% £6. Acetates of lime continue in good supply, but sales are slow—brown we quote £5. and grey £8. Possibly the curtailment of production in America may improve prices later. Murate of ammonia is still offered at low rates. White, £20; grey, £18. 10s. Sal ammoniac—1sts, £33.; 2nds, £31. Bichromates sell freely at convention rates, viz., 4½d. for potash and 3¾d. for soda. Sulphocyanides are more active, but prices do not improve. Barium is offered at 4¾d., ammonium 6½d., and alumina 2s. 6d. White powdered arsenic sells more freely, and to-day's value may be taken as £22. at Garston. The American demand is, however, scarcely up to the average. Carboic acids are firmly held. Crystals 39/40 are quoted 7½d. and crude 60's 1s. 10d. to 1s. 11d. per gallon. Sulphur of all grades remains steady and unchanged, with a fair amount of business passing. Prices to-day are £5. for "gunpowder," and £4. 10s. for "rock." The demand for textile chemicals is below the average.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron. Scotch warrants closed at 44s. 6½d.; Middlesbrough, 40s. 9d. cash; and hematite, 47s. 1½d. Copper quiet: Chili bars, G.O.B.'s and G.M.B.'s, closed at £49. 2s. 6d. to £49. 7s. 6d. cash, and £49. 10s. to £49. 15s. three months. Tin quiet: Straits closed at £61. 5s. to £61. 15s. cash, and £61. 17s. 6d. to £62. 7s. 6d. three months. English ingots, £65. Lead firmer: Spanish, £13. 5s. to £13. 7s. 6d.; English, £13. 10s. Silesian: spelter, ordinary, £17. 7s. 6d. Nickel, 1s. 2½d. Antimony, £29. 10s. to £30. Quicksilver: First hands, £6. 17s. 6d.; second hands, £6. 16s. 6d. Copper shares steady: Cape, 2½ to 2¾; Copiapo, 2½ to 2¾; Libiola, 2¼ to 2½; Mason and Barry, 2¾ to 3; Rio Tinto, 2¾ to 2¾; Tharsis, 5½ to 6½.

GLASGOW, WEDNESDAY.—Market firm, and a moderate business. Scotch done at 44s. 6d., 44s. 6½d. cash; and 44s. 8d. to 44s. 8½d. one month; buyers, 44s. 6½d. cash; sellers 44s. 7d. Cleveland, buyers, 40s. 9d. cash; sellers, 40s. 10d. Cumberland hematite done at 47s. 4d. one month; buyers, 47s. 1½d. cash; sellers, 47s. 2d. Middlesbrough hematite, buyers, 49s. cash; sellers, 49s. 6d.

REPORT ON MANURE MATERIAL.

The improved tone in the market referred to in last report continues, and a fair amount of business has been done. Owing to the hardening tendency of homeward freights, the quotations for mineral phosphate rock are firmer all round. For 75/80% Florida rock shippers are now asking 6d. per unit, in cargoes, c.i.f. to good United Kingdom ports, but this is above buyers' views, and probably a fraction less would be business if bid. Sellers of South Carolina River rock and of 58/63% Algerian have advanced their price to 5d. per unit. There is nothing fresh to report in River Plate bones, but anything of handy size would find buyers at £3. 12s. 6d. per ton. Shippers of East India bone meal are very firm in all positions at £3. 15s. per ton; holders on spot have also advanced their price to £3. 15s., though for good lines it is possible that 1s. 3d. per ton less would be accepted. Nitrate of soda continues quiet on spot at 7s. 6d. for good up to 7s. 7½d. per cwt. for fine quality. After the large business in the forward position the market has become quieter again, but sellers remain firm at the advance.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

There is a fairly good demand for palm oil at firm prices. Lagos is quoted £21. 10s. and Old Calabar £19. 10s. Olive is firm with a moderate business doing, including Seville at £29. 10s. to £30. per ton. Linseed has not maintained its position, and Liverpool makes in export casks are now quoted 17s. 9d. to 18s. 6d. cwt. Cottonseed has also fallen 3d. per cwt., closing at 16s. 6d. to 17s. 3d. cwt. Castor oil is strong and in active request on spot. Sellers are asking 3½d. for good seconds Calcutta, and for first pressure French 3¾d. per lb. Tallow is scarce, and firm in consequence. Resin keeps firm as regards price, but there is a distinct weakening in the demand. Spirits of turpentine are firm on spot at an advance to 21s. 9d. cwt. Petroleum unchanged.

CAKES.—West American linseed is still in good demand at £5. 18s. 9d. to £6. 2s. 6d., and Liverpool makes continue to move well at £7 to £7. 15s. ton. For American cottonseed (decorticated) £5. 12s. 6d. to £6. is still asked. Liverpool undecorticated are fetching a little more, being in fair request at £4. to £4. 10s. Egyptians continue to rise, and are now moving satisfactorily at £4. per ton.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire—common £10., medium £12., best £15.; Derbyshire—common 40s., medium 50s., best 60s.; Welsh—best 90s., seconds 50s., and common 18s.; Irish, Devonshire, 40s to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead: £16. Red lead unchanged. Venetian red: £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide: £22. 10s. to £25.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—Nothing of much importance has been passing during the week. Linseed oil advanced in the early stages, but has again relapsed to its normal position. Refined cotton oil upon the whole is probably easier. The imports to date compared with the same time a year ago have been—linseed, 416,574 qrs., against 481,645 qrs.; rapeseed, 59,991 qrs., against 71,247 qrs.; cottonseed, 127,817 tons, against

102,328 tons; oilcake, 7,223 tons, against 9,098 tons; olive oil, 3,289 tons, against 4,343 tons; Stockholm tar, 5,229 brls., against 6,077 brls. Linseed oil, spot, 16s. per cwt., naked; last four months and Jan.-April, 16s. 3d.; boiled and refined £1. to £1. 10s. per ton extra. Refined cotton oil easier—spot, naked, 14s. 4½d. to 14s. 6d.; Sept.-Oct., 14s. 6d., sellers; Nov.-April, crude, spot, and to April, 13s. 3d., sellers; filtered £1. per ton extra; barrels £1. 10s., and ordinary casks £1. per ton extra. Olive oils unchanged, and not much inquired for: Candia £31. 10s., Malaga £31. 10s., and Seville £30. per tun. Olive oil soaps, 62% fatty acids, £16. 10s. per ton. Oleines unchanged. Castor oil 3½d. to 3¾d. per lb. Cod oils £16. to £18. per ton. Lards show a 3s. advance on the week. Danish butter 7s. advance for arrival. Pail lard quoted 28s. to 30s. Danish and Swedish butters 107s. to 115s. per cwt.; Dutch 108s. to 113s. per cwt.

CAKES.—Linseed cakes steady; 95% pure, £7. 2s. 6d. to £7. 5s. per ton. Oilcakes, £6. 2s. 6d. to £6. 5s.; Russians, £6. 17s. 6d. to £7. Cotton cakes firm; best makes, £4. 2s. 6d. to £4. 5s., spot and Nov.-April; seconds 2s. 6d. per ton less. Rape cakes: none offering.

PAINTS.—The situation is unchanged. Dry mineral colours from £4. to £7. per ton. White and red lead unchanged. Ready mixed paints, £23. per ton. Paint remover, 25s. to 30s. per cwt. Imperial black varnish, £5. 10s. per ton. Ordinary colours in oil, from £10. per ton. Oak varnish, 5s. 6d. per gallon.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

The late slight improvement in the market transactions of general chemicals has been continued, and perhaps even some further progress made; but betterment has not advanced to the mark of inducing any advance in prices. Indeed, the few changes in quotation are rather the other way, but these proceed from exceptional causes. All ordinary chemicals are well dealt in, and prices, though still only at the old figures, are firm. Soda crystals are reported as very scarce, and makers behindhand with orders. Caustic soda, also, is slightly in arrears with its deliveries. The position in mineral oils and paraffins is unchanged, and, on the whole, most unsatisfactory to makers, lubricating oils alone showing anything of health. Sulphate of ammonia has been mending to some purpose during the week, and £7. 16s. 3d., spot, Leith, has been done.

Chief prices current are:—Soda crystals, £2. 12s. 6d., nett, Tyne, soda ash, 48/62°, £4. 2s. 6d. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £4. 17s. 6d. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8., 70/72° £7. 2s. 6d., 60/62° £6. 2s. 6d., and cream 60/62° £6., all nett, Liverpool; bleaching powder, 35/37°, £6. 10s. nett, Tyne; saltcake, 19s. to 20s.; borax, English, refined, £14. 15s. and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3½d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4d. less 5%, any port; nitrate of soda, 7s. 4½d. to 7s. 9d.; sulphate of ammonia, £7. 16s. 3d., prompt, f.o.b. Leith; salammuniac, first and second white, £33. and £31. nett any port; sulphate of copper, £16. 5s. to £16. 10s., less 5% Liverpool; paraffin scale, hard, 1¼d. to 1½d., and soft, 1½d. per lb.; paraffin wax, 120° semi-refined, 1¼d. to 2d. per lb.; paraffin spirit (naphtha), 6d. per gallon; paraffin oil (burning), No. 1, 5¼d., and crystal, 6d., at Glasgow and other big centres, for Scotch buyers (English sales a shade lower); ditto (lubricating) 865° £5. to £5. 5s., 885° £5. 15s. to £6. 5s., and 890/895° £6. 10s. to £7. Week's imports of sugar at Greenock were 4,741 bags, 149 casks, and 100 cases, all beet unrefined.

TYNE CHEMICAL REPORT.

TUESDAY.

The market remains much about the same, with practically no alteration in prices.

Soda crystals are scarce at £2. 12s. 6d. per ton, gross weight, locally; caustic soda, 76/77° £9., and 70° £7. 10s. per ton; sulphur, scarce at £4. 17s. 6d. to £5. per ton; bleaching powder, soft, £6. 10s. per ton, nett; hard, £6. 15s. per ton, nett; caustic soda, 76/77°, £9. per ton, nett; do., 70°, £7. 10s. per ton, nett; recovered sulphur, 2 cwt. bags, £5. per ton, nett; soda ash, 48°, £4. 10s. per ton, nett; do., 50°, £4. 12s. 6d. per ton, nett; do., 52°, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton,

Gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95% crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham salt steady at 9s. to 9s. 3d. per ton. l.o.b. Tees.

COALS.—The coal trade continues fairly steady, though the engineers' strike is beginning to effect the demand for manufacturing coal. Coke firm, and in excellent enquiry for export. Best Northumberland steam, 8s. 9d. to 9s. per ton; second qualities, 7s. 9d. to 8s. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; gas coals, 7s. 3d. to 7s. 6d. per ton; coke, firm, 21s. to 22s. per ton.

New Companies.

Bloomfield and Stourbridge Blue and Red Brick Co., Ltd.—CAPITAL £20,000. in £1. shares (10,000 preference). This company has been formed to acquire and carry on the business of brick, tile, pottery, and earthenware manufacturer, carried on by E. J. Wood at the Bloomfield Brickworks, Tipton, Staffs., and to adopt a certain agreement. The subscribers to the memorandum of association are:—F. J. Mason, Albion-street, Hanley, chartered accountant; H. Lockett, Parker's-terrace, Stoke-on-Trent, printer; R. T. Younghusband, 43, King-street, Newcastle, Staffs., clerk; C. R. Pilsbury, Regent-street, Stoke-on-Trent, clerk; C. W. Stuart, 165, Waterloo-road, Burslem, clerk; T. G. Whiting, 34, Charles-street, Ashwood, Longton, clerk; E. Hawley, 24, Lower-street, Newcastle, Staffs., clerk.

G. C. Allen, Ltd.—CAPITAL £8,000. in £1. shares. This company has been formed to acquire the business carried on by G. C. Allen, to adopt a certain agreement, and to carry on the business of cycle manufacturers, ironmongers, motor-car builders, tin workers, galvanisers, etc. The subscribers to the memorandum of association are:—H. Wood, Old Grammar School, Ashford, clerk; D. W. Sargent, Ashford, proprietor; A. Wall, 129, Wakehurst-road, Wandsworth

Common, traveller; Miss N. Sargent, Saracen's Head Hotel, Ashford; F. Farmer, 36, Park-road, Ashford, ironmonger; G. Beken, 67, High-street, Ashford, saddler; Mrs. E. Allen, 5, Ellenboro' House, North-street, Ashford.

Pimbley Economiser Co., Ltd.—CAPITAL £50,000. in £1. shares. This company has been formed to acquire the business carried on by Joseph Pimbley & Co., Limited, at Farnworth, Lancs., to adopt an agreement with J. Edwards, and to carry on the business of fuel economiser makers, engineers, boiler makers, metal workers, machinists, etc. The subscribers to the memorandum of association are:—J. Gartside, Springfield Works, Salford, cotton doubler; J. Urmsen, Hathershaw Iron Works, Oldham, Engineer; J. D. Kay, Lands End Bleach Works, Middleton, bleacher; O. Thorn, Birkacre Works, Chorley, Lancs., bleacher; J. S. Neill, The Cliffs, Acton, Northwich, gentleman; T. Newby, 31, Market-street, Manchester, architect; J. Carter, Atlas Works, Stalybridge, brass founder.

Sarawak Cutch Co., Ltd.—CAPITAL £25,000. in £1. shares. This company has been formed to adopt a certain agreement, and to carry on at Sarawak or elsewhere the business of manufacturers, importers, exporters, and merchants of bark and extracts thereof. The subscribers to the memorandum of association are:—A. Dejonge, 25, Oxendon-street, S.W., gentleman; G. Wingfield, 15a, Paternoster-row, E.C., chartered accountant; E. L. Burgin, 15, Gray's Inn-square, W.C., gentleman; F. R. Martin, Tyson-road, Honor Oak, S.E., gentleman; W. J. Crutch, Longton-avenue, Sydenham, gentleman; F. Baker, Toppesfield, Friern Barnet-road, N., gentleman; J. H. Galloway, 44, Marmion-road, Lavender Hill, S.W., clerk.

Laidlaw, Mackill and Co., Ltd.—CAPITAL £65,000. in 3,500 £10. preference and 3,000 £10. ordinary shares. This company has been formed to carry on the business of manufacturing chemists, etc., at Glasgow and elsewhere. The subscribers to the memorandum of association are:—R. Mackill, 29, Waterloo-street, Glasgow, shipowner; W. Law, 123, Hope-street, Glasgow, shipowner; J. Reid, 15, Montgomerie-crescent, Kelvinside, Glasgow; W. Wilson, Brablock Lock, Paisley, manufacturer; J. Mackenzie, 150, S. Vincent-street, Glasgow, writer; J. G. Inglis, 24, George-square, Edinburgh, accountant; R. H. Gray, 29, Waterloo-street, Glasgow, clerk. Registered office, 29, Waterloo-street, Glasgow.

IMPORTS OF CHEMICAL PRODUCTS AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending August 21st.

Acetic Acid—	
Holland, 72 pks.	A. & M. Zimmermann
Alkali—	
Belgium, 2,000 c.	F. W. Berk & Co., Ltd.
Alum—	
Holland, 25 cks.	J. W. Cook & Co.
Alumina—	
Holland, 30 cks.	R. W. Greeff & Co.
Ammonia—	
Holland, 40 pks.	H. Lorenz
Arsenic—	
Portugal, 29 brls.	Coverley & Westray
Barium Chloride—	
Germany, 12 cks.	Petri Brs.
Barytes—	
Holland, 299 bgs.	Burrell & Co.
" 28 cks.	Taylor Brs.
" 42	E. J. Diggins
" 22	Robertson, Selby & Co.
Belgium, 200 bgs.	J. L. Lyon & Co.
Holland, 175 pks.	W. Harrison & Co.
Bleaching Powder—	
Holland, 20 cks.	J. M. Steel & Co.
Bleaching Soda—	
Germany, 200 cs.	H. Lambert
Camphor—	
Germany, 1 ck.	T. H. Lee
Caoutchouc—	
E. Indies, 164 c.	S. Figgis & Co.
Rangoon, 28	L. & I. D. Jt. Co.
Zanzibar, 3 c.	"
" 9	S. Figgis & Co.
" 13	Hale & Son
Germany, 3	Major & Field
" 56	L. & I. D. Jt. Co.
" 154	Anderson, Weber & Co.
Sydney, 700	McIlwraith & Co.

P. E. Africa, 50	L. & I. D. Jt. Co.
E. Indies, 11	Clarke & Smith
E. Indies, 64	Henderson Brs.
Natal, 30	L. & I. D. Jt. Co.
Carbolic Acid—	
Holland, 86 pks.	Phillips & Graves
Germany, 20	Brooks, Simpson & Co.
Castor Oil—	
" 24	A. & M. Zimmermann
France, 36 brls.	
" 20 pks.	Beresford & Co.
" 45	F. Boehm
Italy, 25 cs.	J. Greig
" 25 cs.	City Coml. Wf. Ltd.
France, 17 brls.	Lucas & Spencer's Wf. Ltd.
" 81	Mordaunt Brs.
Caustic Potash—	
Germany, 17 cks.	Domeier & Co.
Holland, 40 drs.	J. M. Steel & Co.
Chemicals (otherwise undescribed)	
Germany, 45	Phillips & Graves
Belgium, 46	T. Palmer
" 105	John Cockerill Line
Holland, 55	T. H. Lee
Belgium, 42	O. Scholz
Germany, 317	A. & M. Zimmermann
" 15	L. & I. D. Jt. Co.
Holland, 20	G. Rahn & Co.
" 13	H. Lorenz
" 28	Phillips & Graves
Germany, 76	H. Lambert
Sweden, 20	M. D. Co.
Germany, 289	T. H. Lee
Holland, 30	Carey & Sons
U. States, 60	Potter & Clarke
Citric Acid—	
Italy, 18 pks.	J. Knill & Co.
Cream of Tartar—	
France, 8 cs.	C. Atkins & Nisbet
Spain, 2 cks.	W. M. Smith & Sons
France, 5	W. C. Bacon & Co.
Holland, 10	20 kgs. Kirkpatrick & Co.
France, 10	B & F. Wf. Co.

" 5	F. C. Devon & Co.
" 5	M. Ashby, Ltd.
Italy, 73	Thames S. T. & L. Co., Ltd.
Dextrine—	
Germany, 52 pks.	Pronk, Davis & Co.
Dyestuffs—	
Anthracene	
Holland, 166 cks.	Burt, Boulton & Co.
Argols	
Italy, 514 bgs.	B. Jacob & Sons
Cochineal	
Canaries, 5 bgs.	W. M. Smith & Sons
" 8	Sperling & Williams
" 21	Kuhner, Henderson & Co.
" 44	W. Dutton & Co.
" 35	J. Owen
Extracts	
France, 600 cks.	Boutcher, Mortimore & Co.
U. States, 80 pks.	W. Burton & Sons
France, 20 cks.	B. & F. Wf. Co.
Canada, 80	Furness, Withy & Co.
Gambler	
Germany, 36 bls.	Brown & Elmslie
Singapore, 224	J. Greig
" 445	Hendrey & Martin
Indigo	
E. Indies, 41 chts.	L. & I. D. Jt. Co.
" 10	L. & N. W. Ry.
Holland, 6	Page, Son & Co.
Myrabolams	
E. Indies, 2,000 pkts.	Montgomerie & Co.
" 2,000	P. & O. Co.
Shumac	
Italy, 150 bgs.	H. Johnson & Sons
Tanners' Bark	
Adelaide, 112 t.	H. Devitt & Co.
" 70	Beresford & Co.
Natal, 32	Flack, Chandler & Co.
Adelaide, 59	Baxter & Hoare
Melbourne, 32	Beresford & Co.

N.Z., 12	G. N. Souraly & Co.
Melbourne, 10	Dalgety & Co.
" 60	Deering & Robottom
Natal, 58	A. & W. Nesbit
Melbourne, 60	"
Turmeric	
E. Indies, 600 bgs.	Henderson Brs.
Glucose—	
U. States, 100 pks.	620 c. T. J. Lipton Williams
" 475	1,017 Torrey & Co.
" 925	3,175 R. G. Hall & Co.
" 125	224 Ohlenschlaeger Brs.
Germany, 100	100 M. D. Co.
" 35	283 Deering & Robottom
U. States, 330	500 G. Clark & Son
" 400	400 J. Parsons
Canada, 104	104 M. D. Co.
" 100	600 Page, Son, & Co.
" 150	840 R. G. Hall & Co.
U. States, 500	500 Humphrey & Co.
" 250	250 Pearce, Pelly, & Co.
" 50	308 C. Southwell & Co.
" 750	750 L. Norman & Co.
" 600	250 L. & I. D. Jt. Co.
" 50	300 Cole & Carey
" 50	300 Page, Son, & Co.
Glue—	
France, £11	Mory & Co.
" 35	T. M. Duché & Sons
U. States, 200	Pickford & Co.
Belgium, 396	J. Barber & Co.

land, 100 G. Rahn & Co.
Australia, 150 T. & F. Powell
land, 15 Phillips & Graves
any, 30 Craven & Co.
and, 60 Capt. Nash
68 Carey & Sons

Black—
ates, 150 brls. L. & I. D. Jt. Co.
25 Lunham & Moore
50 hds. J. Melvin

Acetate—
any, 15 cks. F. Boehm

anese Ore—
any, 1 t. H. Honychurch & Co.

re—
any, 60 t. F. W. Berk & Co., Ltd.
um, 10 H. Johnson & Sons

yl Alcohol—
any, 8 dms. Tingle, Jacobs, & Co.
ates, 50 brls. H. G. Brown

ses—
ates, 250 pks. 1,500 c. W. McCulloch

thol—
and, 4 cks. Phillips & Graves

l Sulphate—
any, 4 cks. Petri Brs.

ies, 54 bgs. C. F. Gerhardt
and, 23 cks. Phillips & Graves

phate Rock—
ce, 160 t. Hine Brs. & Co.
145 A. Hunter & Co.
408 G. M. Bauer

asia, 1,000 brls. W. F. Malcolm & Co.
500 Fellows, Morton, & Co.
ce, 171 Poth. Hille, & Co.
ates, 3 brls. Lunham & Moore
ce, 171 Fellows, Morton, & Co.
ussia, 500 Linck, Moeller, & Co.

ago—
100 cks. J. Thredder, Son, & Co.
on, 402 Williams, Torrey, & Co.
da, 32 J. Knill & Co.

ium Carbonate—
any, 121 c. Petri Brs.
300 Charles & Fox
430 Gas Light & Coke Co.
um, 100 Petri Brs.

ium Chloride—
and, 34 cks. H. Johnson & Sons

ium Oxalate—
and, 20 cks. R. W. Greeff & Co.

ium Permanganate—
and, 50 cks. Phillips & Graves

ium Sulphate—
any, 308 bgs. Anglo-Conti. Guano Works

ce Stone—
24 t. J. Kitchin, Ltd.

ates, 700 brls. T. Nikits & Co.
600 J. Knight & Son
150 Union L. Co.
336 F. & S. Chiesman & Co.

Oil—
any, 20 brls. Berlandina Brs

stre—
dies, 449 bgs. Lucas & Spencer's Wf.
any, 5 cks. L. & I. D. Jt. Co.

um, 2,000 c. Sawyer, Sons, & Co.

m Acetate—
ce, 58 cks. H. Wallace & Co.
um, 52 H. Lorenz
ce, 100 bgs. J. Harrison

m Prussiate—
um, 40 cks. Blagden, Waugh, & Co.

any, 120 cs. Phillips & Graves
ates, 1,600 bgs. Union L. Co.
3,365 Bertel Food Co.
nd, 1,485 cs. Little & Johnston
um, 50 F. Clayton & Co.
ates, 2,000 bgs. J. Forsey
100 100 sks. W. G. Taylor & Co.
140 193 R. G. Hall & Co.
160 E. Olyett & Sons

Holland, 140 cs. Phillips & Graves
" 40 C. Tennant, Sons, & Co.

Germany, 200 Seaward Brs.
France, 200 W. E. Cole
Holland, 50 Hernu, Peron, & Co.
Belgium, 120 Elkan & Co.
" 545 E. & T. Pink
160 Becker & Wagner

Stearine—
Holland, 95 cks. Palmer & Co.
U. States, 172 bgs. H. Hill & Sons
Belgium, 250 10
50 Kumpf & Eckenstein
France, 10 B. & F. Wf. Co.

Sulphate—
Belgium, 36 brls. E. W. Carling & Co.

Talc—
E. Indies, 49 A. B. Curtis & Co.
50 Carter, Paterson & Co.
" 1,730 W. M. Smith & Sons
France, 40 Brach & Co.
Germany, 8 T. H. Lee

Tar—
N. Russia, 2,810 brls. W. F. Malcolm & Co.
" 1,650 Union Whvs. Co.
2,568 Linck, Moeller, & Co.

Tartaric Acid—
Holland, 21 pks. B. & F. Wf. Co.
" 20 Kirkpatrick & Co.
" 3 F. C. Devon & Co.
France, 14 B. & F. Wf. Co.

Ultramarine—
Holland, 10 pks. J. Barber & Co.
Germany, 30 cs. Steinhoff, Sens, & Co.

Belgium, 10 cks. W. Harrison & Co.
Holland, 4 Phillips & Graves
" 20 Hernu, Peron, & Co.
8 pks.

Yermillon—
Germany, 1 cs. Phillips & Graves

White Lead—
Holland, 19 cks. Randall Brs.
Belgium, 56 T. & W. Farmiloe. Ld.
26 bgs. Burrell & Co.
Germany, 36 F. G. Clifford
Holland, 48 A. & M. Zimmermann
" 33 W. Balchin
28 brls. Burrell & Co.
Germany, 25 H. B. Alder & Co.
Holland, 31 cks. M. Ashby, Ltd.
Germany, 45 Randall Brs.
12 Taylor Brs.

Wood Pulp—
Germany, 1,000 pks. J. Sharp
Canada, 500 Henderson, Craig, & Co.
U. States, 726 Williams, Torrey, & Co.
Sweden, 75 Thames S. T. & L. Co.
400 Henderson, Craig, & Co.
400 Hummel & Co.
U. States, 3 L. & I. D. Jt. Co.
Norway, 652 W. G. Taylor & Co.
Holland, 54 Thames S. T. & L. Co.
Sweden, 132 Christophersen, Andrews, & Co.

Norway, 40
" 5,830 London Paper Mill Co.
" 246 Becker & Co.
300 W. E. Bott & Co.
Holland, 54 C. S. Lovell
" 794 Henderson, Craig, & Co.

Zinc Oxide—
Germany, 5 cks. L. & I. D. Jt. Co.
Holland, 30 M. Ashby, Ltd.
Germany, 180
Holland, 48 J. Matton
Germany, 50 pks. Prprs. Dowgate Dk.
50 cks. Burrell & Co.
U. States, 100 100 brls. M. Ashby, Ltd.

Zinc Sulphate—
Germany, 32 cks. Burgoyne & Co.

LIVERPOOL.

Week ending August 19th.

Acetate of Lime—
New York, 1,540 bgs. Balfour Williamson

Album—
Marseilles, 13 cs.

Aluminium—
New York, 243 bxs. T. Askbury

Arsenic—
Antwerp, 17 cks.

Asbestos—
Genoa, 36 bls.

Barytes—
Antwerp, 200 bgs. 69 cks.
Rotterdam, 22

Bone Meal—
Bombay, 8,811 bgs.

Borate—
Antofagasta, 1,320 bgs.

Borax—
Mollendo, 2,600 bgs. Hainsworth Watson

Caoutchouc—
Havre, 42 cks. Cunard S. S. Co., Ltd.

Carbolic Acid—
Rotterdam, 3 cks.

Castor Oil—
Leghorn, 46 cs.
Calcutta, 50

Chemicals (otherwise unescr. best)
Hamburg, 10 cks.

Cod Oil—
St. John's, Nfd., 40 cks. Harrington & White
Job Brs

Colours—
Genoa, 3 cs. 2 brls.
Hamburg, 5 cks.
Stettin, 7 Clayton & Jowett
" 10 H. W. Hater
" 25 Evans, Sons & Co.
" 150 A. Wilkinson & Sons

Rotterdam, 8

Copper Sulphate—
Rouen, 1 ck. Co-op. W'sale Society, Ltd.

Cream of Tartar—
Bordeaux, 17 cks.

Dyestuffs—
Annatto
Bordeaux, 20 hds.
Argols
Lisbon, 26 cks.
Cutch
Rangoon, 1,000 bxs.
Fustic
Vera Cruz, 1,775 sticks
Leward, Bibby & Co.

Gambler
Singapore, 147 bls.
Akassa, 4 bgs.

Logwood
Laguna, 217 t. 10 c. D. Midgley & Son

Madder
Smyrna, 20 bls.

Myrabolams
Bombay, 1,280 bgs.

Saffron
Valencia, 1 cs.

Shumac
Barcelona, 100 bgs.
Palermo, 4,230 110 bls
50 Heaton, Smith & Co.

Turmeric
Calcutta, 17 cks. 8 bgs

Valonia
Patras, 257 bgs. A. M. Caliafas
Gythion, 3,548 Papayanni & Jeremias
" 510 G. T. Scrin
" 1,376 R. Shaw, Ld.
881 L. Vazanaros
Smyrna, 365 75 t. Barry Brs.
399 52

Farina—
Stettin, 6,400 bgs. Browne, Geveke & Co.
Hamburg, 500 H. Tyrer & Co.

Glucose—
New York, 550 brls.
Boston, 240
Baltimore, 200
Philadelphia, 20

Glue—
Rouen, 10 cs. 31 cks. Co-op. W'sale Society, Ltd.
Rotterdam, 7

Limestone—
Antwerp, 2 crts.

Lithopone—
Bremen, 25 cks.

Magnesia—
Kimassi, 2 bgs.

Ochre—
Marseilles, 10 cks.
Rouen, 66 Co-op. W'sale Society, Ltd.

Paint—
Marseilles, 280 brls.
N. Orleans, 60 T. Merry & Co.
Boston, 10 cs. Leech & Co.

Paraffin Scale—
Philadelphia, 100 brls.
New York, 400 Thompson & Bedford

Pitch—
Marseilles, 48 cks.

Potash—
Stettin, 19 cks. Sachse & Klemm
Montreal, 25 brls.

Potassium Chlorate—
Copenhagen, 21 kgs. N. Johansen & Dahl

Pumice Stone—
Catania, 7 brls.
Messina, 5 cs. 110 bgs.
Rotterdam, 2

Pyrites—
Huelva, 4,357 t. Matheson & Co.

Rosin—
Savannah, Ga., 3,325 brls.
N. Orleans, 700
New York, 1,600

Saltpetre—
Karachi, 728 bgs.
Calcutta, 880 Ralli Brs.
Hamburg, 9 brls.

Soap—
Marseilles, 148 cs.
Barcelona, 3 West Ind. & Pac. S. S. Co.
Montreal, 2 bxs. Allan Brs. & Co.
Naples, 1 cs. Davies, Turner & Co.

Soapstone—
Bordeaux, 200 bgs. Geo. G. Blackwell, Sons & Co.
Genoa, 200 G. Huntriss & Co.

Starch—
Boston, 500 sks.
Antwerp, 98 cs. J. T. Fletcher & Co.

Stearine—
Rotterdam, 14 bls.
Antwerp, 38 bgs.

Sulphur—
Naples, 67 brls. 200 bgs. 50 t.

Tallow—
Baltimore, 330 brls. 40 tcs.

Tar—
Archangel, 2,040 brls.

Tartaric Acid—
Marseilles, 16 cks.
Rotterdam, 2

Treacle—
Stettin, 50 cks.
Boston, 3,000 brls.

Varnish—
New York, 5 brls. W. A. Warrick
" 3 J. H. Holmes & Co.

Philadelphia, 5 pks.

Verdigris—
Bordeaux, 7 cks.

Waste Salt—
Hamburg, 827 cks. H. Tyrer & Co.

White Lead—
Antwerp, 13 cks.
Rotterdam, 11

Wood Pulp—
Hamburg, 1 bl.
Rotterdam, 184 bls.
Boston, 543 bds. Spicer Brs.
571 bls.

Zinc Ashes—
Marseilles, 5 cks.

Zinc Oxide—
Antwerp, 25 brls. 8 cks.

Zinc White—
Stettin, 30 cks. Morrish Ashley

MANCHESTER

Week ending August 21st.

Albumen —	
Riga,	6 cs.
Alizarine —	
Rotterdam,	59 cks.
Alum —	
Rotterdam,	19 cks.
Ammonia —	
Rotterdam,	71 cyldrs.
Ammonium Chloride —	
Rotterdam,	11 cks.
Antimony Bifluoride —	
Hamburg,	3 cks.
Antimony Oxide —	
Rotterdam,	1 cs.
Antimony Salts —	
Hamburg,	5 cks.
Rotterdam,	4
Asbestos —	
Quebec,	80 bgs. C. W. Rawson
(Thro' Barrow)	
Barium Chlorate —	
Hamburg,	1 ck.
Barium Chloride —	
Hamburg,	23 cks.
Barytes —	
Rotterdam,	200 bgs.
Antwerp,	100
Caustic Soda —	
Hamburg,	24 cks.
Chemicals (otherwise undes.) —	
Rouen,	22 cks.
Rotterdam,	6
Chrome Acetate —	
Rotterdam,	10 cks.
Colours —	
Rouen,	5 cks.
Hamburg,	3 2 cs.
Antwerp,	9
Rotterdam,	29 43
Farina —	
Hamburg,	100 bgs.
Gelatine —	
Rouen,	10 cs.
Glucose —	
Rotterdam,	10 cks.
Glue —	
Rouen,	33 cks. 36 bls.
Treport,	34
Rotterdam,	60 bgs.
Hamburg,	1 cs.
Limestone —	
Antwerp,	1 cs.
Litharge —	
Rotterdam,	20 cks.
Manganese Ore —	
Rotterdam,	2 cks.
Ochre —	
Rouen,	1 ck.
Phosphate —	
Rotterdam,	11 cks.
Pitch —	
Antwerp,	6 brls.
Potash —	
Treport,	4 cks. 23 dms.
Potassium Chloride —	
Hamburg,	40 dms.
Potassium Sulphate —	
Rotterdam,	100 cks.
Soap —	
Rotterdam,	3 cs.
Sodium Nitrate —	
Rotterdam,	16 cks.
Starch —	
Hamburg,	452 cs. 10 bgs.
Antwerp,	80
Rotterdam,	95
Stearine —	
Antwerp,	5 bgs.
Tannic Acid —	
Hamburg,	4 cs.
Tar Salts —	
Hamburg,	4 cks.
Tartaric Acid —	
Rotterdam,	17 cks.
Waste Salt —	
Hamburg,	520 bgs. and qty.
Wood Pulp —	
Halifax,	8,361 bls.
Pt. Medway,	41,978
Rotterdam,	356 pks.
Hamburg,	120

Zinc Oxide—Antwerp, 20 brls.
Rotterdam, 65**HULL.**

Week ending August 21st.

Acetic Acid —	
Antwerp,	28 cks. Bailey & Leatham, Ld.
Aluminium —	
New York,	11 brls. Wilson.
	40 bxs. Sons, & Co., Ld.
Antimony —	
Dunkirk,	3 cks. Wilson, Sons, & Co., Ld.
Asbestos —	
Boston,	1,800 bgs. Wilson, U.S.A., Sons, & Co., Ld.
Barytes —	
Hamburg,	21 cks. Bailey & Leatham, Ld.
Rotterdam,	53 Hutchinson & Son
Bremen,	68
Chemicals (otherwise undescribed) —	
Hamburg,	84 pks. Wilson, Sons, & Co., Ld.
Rotterdam,	22 cks. W. & C. L. Ringrose
Dunkirk,	54 pks. Wilson, Sons, & Co., Ld.
Bremen,	1 cs. Veltmann & Co.
Antwerp,	139 pks. Wilson, Sons, & Co., Ld.
Cod Oil —	
Christiania,	10 brls. Wilson, Sons, & Co., Ld.
Bergen,	38
Aalesund,	76
Hamburg,	16 60 cks.
Colours —	
Antwerp,	16 pks. Wilson, Sons, & Co., Ld.
Rotterdam,	4 cks. Hutchinson & Son
Stettin,	4 cks. Wilson, Sons, & Co., Ld.
Dunkirk,	24 8 brls. W. & C. L. Ringrose
Rotterdam,	94 pks.
Ghent,	30
Dextrine —	
Stettin,	50 bgs. Wilson, Sons, & Co., Ld.
Hamburg,	20
Dyestuffs —	
Alizarine	
Rotterdam,	64 pks. W. & C. L. Ringrose
Extracts	
New York,	50 bxs.
Rotterdam,	3 cts. Wilson, Sons, & Co., Ld.
"	5 brls. W. & C. L. Ringrose
Madder	
Rotterdam,	6 cks. Hutchinson & Son
Farina —	
Hamburg,	625 bgs. Bailey & Leatham, Ld.
"	50 Wilson, Sons, & Co., Ld.
Gelatine —	
Hamburg,	3 cs. Wilson, Sons, & Co., Ld.
Glucose —	
New York,	50 brls. Wilson, Sons, & Co., Ld.
"	600
Stettin,	200
Boston, U.S.A.,	100 brls.
Glue —	
Hamburg,	10 bgs. Wilson, Sons, & Co., Ld.
Rouen,	5 cks. Rawson & Robinson
Lead Acetate —	
Hamburg,	3 cks. Bailey & Leatham, Ld.
Limestone —	
Antwerp,	1 cte. Wilson, Sons, & Co., Ld.
Linseed Oil —	
Amsterdam,	120 brls. Hutchinson & Son
Phosphorus —	
Hamburg,	46 pks. Bailey & Leatham, Ld.

Pitch—

St. Petersburg, 71 cks.

Pyrites—

Stockholm, 630 t.

Salt—

Hamburg, 3 cs. Wilson, Sons, & Co., Ld.

Soap—

Bremen, 1 ck. Veltmann & Co.

Soda—

Antwerp, 20 bgs. Bailey & Leatham, Ld.

" 30 Wilson, Sons, & Co., Ld.

Starch—

Ghent, 438 cs. Hutchinson & Son

" 43 Wilson, Sons, & Co., Ld.

Antwerp, 150 Bailey & Leatham, Ld.

Bremen, 2,955 pks. Veltmann & Co.

Antwerp, 80 cs.

Talc—

New York, 700 bgs. Wilson, Sons, & Co., Ld.

Tallow—

Dunkirk, 110 cks. Wilson, Sons, & Co., Ld.

New York, 100 tcs. Wilson, Sons, & Co., Ld.

Tar—

Drontheim, 77 brls. Wilson, Sons, & Co., Ld.

Treacle—

New York, 1,385 brls. Wilson, Sons, & Co., Ld.

Boston, U.S.A., 225

Ultramarine—

Rotterdam, 4 cks. Hutchinson & Son

Bremen, 22

White Lead—

Amsterdam, 23 cks. Hutchinson & Son

Antwerp, 34 Bailey & Leatham, Ld.

Rotterdam, 42 Hutchinson & Son

Wood Pulp—

Ghent, 2 cs. Hutchinson & Son

Christiania, 15 Wilson, Sons, & Co., Ld.

Gothenburg, 838

Drontheim, 1,435

Helsingfors, 116 J. Good & Sons

Zinc Oxide—

New York, 60 brls.

GLASGOW.

Week ending August 20th.

Acetic Acid —	
Rotterdam,	8 cks. J. Rankine & Son
Acetone —	
Fiume,	30 cks. Noble & Co.
Barium Sulphate —	
Antwerp,	650 bgs.
Barytes —	
Rotterdam,	86 cks. J. Rankine & Son
Hamburg,	450 bgs.
Castor Oil —	
Fiume,	6 cs. Robertson & M'Intosh
Chemicals (otherwise undescribed)	
Gothenburg,	2 cks. 10 kgs.
Chrome Ore —	
Ourmelia,	2,400 t. J. & J. White
Macri,	1,790
Chromium Chloride —	
Rotterdam,	1 ck. J. Rankine & Son
Colours —	
Rotterdam,	1 ck. J. Rankine & Son
35 pks. 3 bxs. 2 brls.	
Cottonseed Oil —	
New York,	50 brls.
Cream of Tartar —	
Barcelona,	12 cks.
Dyestuffs —	
Alizarine	
Rotterdam,	36 cks. J. Rankine & Son
1 brl.	

Cutch	
Rangoon,	500 bxs.
Extracts	
Antwerp,	4 cks.
Indigo	
Rotterdam,	1 cs. J. Rankine & Son
Madder	
Rotterdam,	2 cks. J. Rankine & Son
French Chalk —	
Fiume,	250 bgs.
Glue —	
Fiume,	100 bgs.
Rouen,	92 cks.
Rotterdam,	20 bgs. J. Rankine & Son
Gypsum —	
Rouen,	400 bgs.
Iron Oxide —	
Trieste,	27 cks. Ferguson & Reid
Litharge —	
Rotterdam,	11 cks. J. Rankine & Son
Manganese —	
New York,	97 cks.
Paint —	
Amsterdam,	2 dms.
Potash —	
Dunkirk,	2 cks.
Potassium Sulphate —	
Rotterdam,	6 cks. J. Rankine & Son
Saltpetre —	
Hamburg,	10 kgs. 1 ck. 2 brls.
Soap —	
Fiume,	42 cs.
Starch —	
Fiume,	20 bgs. W. Stirling & Son
Antwerp,	138 cs.
Rotterdam,	110 J. Rankine & Son
Stearine —	
Rotterdam,	14 cks. J. Rankine & Son
Antwerp,	25 bgs.
Tallow —	
New York,	50 brls.
Tartar —	
Oporto,	5 cks.
Yarnish —	
Antwerp,	2 cks.
New York,	4 brls.
White Lead —	
Rotterdam,	38 cks. J. Rankine & Son
Wood Pulp —	
Montreal,	872 bls. 690 bndls.
Christiania,	1,684
Zinc White —	
Rotterdam,	13 pks. J. Rankine & Son

TYNE.

Week ending August 21st.

Alum Earth —	
Hamburg,	47 cks. Tyne S. S. Co.
Arsenic —	
Hamburg,	5 cks. Tyne S. S. Co.
Barium Chlorate —	
Rotterdam,	350 bgs. Tyne S. S. Co.
Barytes —	
Rotterdam,	174 bgs. Tyne S. S. Co.
Colours —	
Antwerp,	3 cks. Tyne S. S. Co.
Hamburg,	11 2 cs.
Rotterdam,	4
Glue —	
Antwerp,	2 cks. Tyne S. S. Co.
Hamburg,	4
Limestone —	
Antwerp,	5 cts. Tyne S. S. Co.
Linseed Oil —	
Amsterdam,	8 cks. Wm. Swainson & Son
Magnesia —	
Hamburg,	1 cs. Tyne S. S. Co.
Quicksilver —	
Copenhagen,	100 cyldrs.
Soap —	
Rotterdam,	3 cs. Tyne S. S. Co.
Soda —	
Antwerp,	6 cks. Tyne S. S. Co.

Sodium Nitrate —	
Antwerp, 21 bgs.	Tyne S. S. Co.
Starch —	
Rotterdam, 100 cs.	Tyne S. S. Co.
Antwerp, 198	"
Ultramarine —	
Rotterdam, 1 ck.	Tyne S. S. Co.
Zinc Oxide —	
Antwerp, 25 brls.	Tyne S. S. Co.

GOOLE.

Week ending August 18th.

Alizarine —	
Rotterdam, 58 brls.	

Alkali —	
Dunkirk, 5 cks.	
Aniline —	
Rotterdam, 195 cks.	47 cs.
Barytes —	
Rotterdam, 10 cks.	110 bgs.
Caoutchouc —	
Boulogne, 13 cks.	
Chemicals (otherwise undescribed)	
Hamburg, 1 ck.	
Dyestuffs (otherwise undescribed)	
Rotterdam, 37 cks.	3 cs.
Boulogne, 22	2 55 pks.
Indigo —	
Rotterdam, 1 ck.	1 cs. 21 chts.
Madder —	
Rotterdam, 2 cks.	

Potash —	
Rotterdam, 8 cks.	20 dms.
Dunkirk, 29	
Pyrites —	
Huelva, 1,015 t.	
Bossmo, 1,050	
Quebracho Extract —	
Antwerp, 23 cks.	
Saltpetre —	
Rotterdam, 100 bgs.	
Hamburg, 21 cks.	
Tartar —	
Antwerp, 15 bgs.	
Rotterdam, 2 cks.	
Waste Salt —	
Hamburg, 100 t.	

GRIMSBY.

Week ending August 21st.

Aniline —	
Hamburg, 23 pks.	
Antwerp, 1 ck. 41 cs.	23
Caoutchouc —	
Hamburg, 1 cs.	1 ble.
Rotterdam, 3	
Chemicals (otherwise undescribed)	
Hamburg, 2 cks.	1 cs.
Antwerp, 1	
Plumbago —	
Hamburg, 2 cks.	
Saltpetre —	
Antwerp, 170 bgs.	
Wolfam Ore —	
Hamburg, 10 cs.	

EXPORTS OF CHEMICAL PRODUCTS**OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.****LONDON.**

Week ending August 25th.

Acids —	
Cape Town, 18 cs.	£13
Durban, 20	50
Calcutta, 2	10
Alkali —	
New York, 1 t. 10 c.	£14
Melbourne, 10 cks.	20
Alum —	
Salonica, 20 t. 1 c.	£94
Ammonia —	
Cape Town, 10 cs.	£15
Durban, 5 cyldrs.	12 40
Pt. Elizabeth, 10	15
Cologne, 6	51
Ammonium Carbonate —	
Rouen, 5 t.	£129
Cape Town, 6 c.	12
Sydney, 15 cs.	20
Ammonium Chloride —	
Bussorah, 2 t.	£30
Adelaide, 9 c.	17
Sydney, 5 14	89
Ammonium Sulphate —	
Mauritius, 125 t.	£994
Bremen, 250	1,900
Rouen, 100	700
Hamburg, 170	1,275
Amsterdam, 275 15 t.	2,327
Arsenic —	
Yokohama, 20 kgs.	£24
Hio, 1 t.	24
Bleaching Powder —	
Cape Town, 9 c.	£6
Borax —	
Auckland, 1 t. 3 c.	£19
E. London, 3 11	58
Pt. Elizabeth, 100 kgs.	73
Carbonic Acid Gas —	
Jersey, 57 tubes	£21
Caustic Potash —	
Wanganui, 16 c.	£37
Caustic Soda —	
Lyttelton, 6 t. 5 c.	£45
Wanganui, 5	36
Delagoa Bay, 1 2	13
Melbourne, 1 9	34
Otago, 1	18
Chemicals (otherwise undescribed)	
Brisbane, 50 pks.	£63
Adelaide, 62 20 cs.	64
E. London, 3	30
Bombay, 12	20
Sydney, 78	282
Colombo, 2	22
Christiana, 5 cks.	60
Hamburg, 15 kgs	12 175
New York, 5 brls. 2	7 101
Antwerp, 2	25
Dunkirk, 33	450
Auckland, 106 pks.	403
Wellington, 41	63
Fremantle, 36 15	231
Rosario, 30	230
San Francisco, 30 dms	52
Dusseldorf, 10	100
Montreal, 5	14
Brussels, 3 cs.	52
Shidwall, 10 kgs.	18
Rotterdam, 25	138
Cologne, 1	35
Melbourne, 1	10

Chlorate of Lime —	
Lyttelton, 5 c.	£5
Citric Acid —	
Libau, 2 c.	£14
Bombay, 4	28
Fremantle, 5	33
Calcutta, 1	60
Antwerp, 10	60
Melbourne, 10	60
Auckland, 1	5
St. Petersburg, 2 t. 10	300
B. Ayres, 2	14
Pt. Elizabeth, 1	6
Coal Products —	
Alizarine	
Lyttelton, 2 cks.	£30
Aniline	
Calcutta, 1 ik. 1 cs.	£155
Aniline Oil	
New York, 19 dms.	£600
Aniline Salt	
New York, 30 cks.	£220
Anthracene	
Dusseldorf, 255 cks.	£1,032
Benzine	
10 dms	£7
Benzol	
Rotterdam, 49 cks. 20 pns. 35 dms.	£1,194
Carbolic Acid	
E. London, 20 dms.	£9
Santos, 750	243
Montreal, 3 cs.	15
Hamburg, 8 cks.	65
Dusseldorf, 160	1,325
Singapore, 12 1	10
Hong Kong, 20	7
Creosote	
Dieppe, 23,500 galls	£123
Dyes (otherwise undescribed)	
Boston, 4 pks.	£95
Naphthaline	
Paris, 155 bgs.	£12
Pitch	
Salonica, 125 brls.	£37
New York, 16 536 cks.	233
Montreal, 100 tcs.	86
Boston, 200 11	127
Newport News, 525 bgs.	120
Philadelphia, 200	50
Alexandria, 400	110
Antwerp, 870 t.	1,129
Tar	
Sydney, 50 dms.	£9
St. Petersburg, 4,010 cks.	2,607
E. London, 400	16
Hong Kong, 10 brls.	8
Rotterdam, 200	125
Riga, 200	150
Copperas —	
Salonica, 17 c.	£29
Copper Sulphate —	
Smyrna, 1 t	£20
Konigsberg, 3	50
Cologne, 10	166
Cream of Tartar —	
Brisbane, 5 c.	£20
Dunedin, 1 t.	82
Wellington, 13	51
Sydney, 2 10	207
Fremantle, 3	11
Auckland, 10	39
Disinfectants —	
Brisbane, 13 cs.	£19
Cape Town, 4 pks.	13
Bordeaux, 4 cks.	20
Hamburg, 25	125
Lyttelton, 15	46

Otago, 13	25
Calcutta, 150 dms.	57
Sydney, 25 cs.	49
Guano (Fish) —	
Dunkirk, 213 t.	£850
Manure —	
Trinidad, 150 t.	£1,500
Guadeloupe, 11 6 c.	120
Jersey, 95 11	200
Guernsey, 106	475
Durban, 10	50
Nitric Acid —	
Hong Kong, 4 cs.	£11
Phosphorus —	
Lisbon, 3 cs.	£49
Potash —	
B. Ayres, 2 t. 3 c.	£37
Melbourne, 1 6	52
Singapore, 1 cs.	35
Potassium Chlorate —	
Calcutta, 1 t.	£34
Potassium Cyanide —	
E. London, 5 t.	£435
Melbourne, 40 cs.	336
Sydney, 40	338
Havre, 25	216
Delagoa Bay, 1	93
Potassium Prussiate —	
Calcutta, 5 c.	£13
Genoa, 1 t.	50
Sal Acetos —	
Treport, 2 t. 3 c.	£110
Saltpetre —	
Oporto, 3 t. 14 c.	£69
Brisbane, 1 6	28
Oporto, 8 19	170
Sheep Dip —	
Cape Town, 3 t.	£75
Wellington, 65 pks.	111
Durban, 8 cs.	36
Lyttelton, 12 c.	19
Napier, 12 dms.	11
Bluff, 5 cks.	14
Dunedin, 8	15
Melbourne, 250 12	166
B. Ayres, 130	75
Soda Ash —	
Fremantle, 5 t. 6 c.	£23
Soda Crystals —	
Piraeus, 1 t. 13 c.	£7
Pt. Elizabeth, 0	18
Cape Town, 1	6
Sodium Acetate —	
Brisbane, 1 t. 7 c.	£31
Sodium Bicarbonate —	
Auckland, 15 c.	£6
Marseilles, 10 t.	71
E. London, 1	8
Seychelles, 1	7
Sodium Bisulphite —	
Lyttelton, 3 t. 12 c.	£16
Sodium Hyposulphite —	
Wellington, 1 t.	£10
Sodium Nitrate —	
Madras, 10 t.	£87
Sodium Prussiate —	
Hamburg, 1 t.	£37
Sodium Sulphate —	
Ghent, 100 t.	£150
Sulphur —	
Otago, 5 t.	£25

Tartaric Acid —	
Adelaide, 5 c.	£28
Fremantle, 5	32
Bombay, 20	110
Cape Town, 2	12
Wellington, 2	12
Melbourne, 15	98
Napier, 7	45
Hio, 10	57
Yokohama, 10	57
Sydney, 1 t. 10	177

LIVERPOOL.

Week ending August 25th.

Acetic Acid —	
Lisbon, 14 c.	£9
Albumen —	
Boston, 4 t. 1 q.	£90
Alum —	
Smyrna, 14 t. 3 c.	£77
B. Ayres, 1	6
Vigo, 1 17	9
Piraeus, 3	14
Alexandretta, 2 17	13
Tripoli, 1 6	6
Montreal, 15 5	71
Aluminous Cake —	
Calcutta, 12 t. 4 c.	£44
Melbourne, 6 4	10
Dunedin, 5 7 1 q.	15
Ammonia —	
Philadelphia, 1 c.	£13
Ammonium Carbonate	
Amsterdam, 4 c.	£6
Ammonium Chloride —	
Salonica, 1 t.	£31
Fiume, 10 c.	18
Billbao, 5 12 1 q.	100
Smyrna, 1 12 2	117
Trieste, 1	30
Syria, 14	21
Barcelona, 19	18
Antwerp, 1	18
Hio, 1 5	23
Tocopilla, 1 2	4
Kustendjie, 4	5
Rouen, 1 8	45
Ammonium Sulphate —	
Valencia, 5 t.	£45
Leghorn, 5 16 c.	452
Tarragona, 15	135
Billbao, 19 13 2	152
Genoa, 19 5	160
Las Palmas, 49 7	434
Demerara, 5 16 3	45
Nantes, 100 11 1	803
Teneriffe, 57 10	479
Arsenic —	
San Francisco, 3 t. 14 c.	£8
Barium Nitrate —	
Vera Cruz, 5 c.	£5
Bleaching Powder —	
Boston, 932 cks.	40 bxs.
Cape Town, 40	4 dms.
Galatz, 32	
Philadelphia, 21	
Baltimore, 21	
Bombay, 20 cs.	38 bxs.
Dunkirk, 18	

Hong Kong, 1,000		
Karachi, 300		
Lyttelton, 58		
Malta, 30		
Nantes, 80	12 brls.	
Nagasaki, 100		
Pt. Natal, 20	10 bgs.	
Santos, 50		
Yokohama, 250		
Sodium Carbonate—		
Almeria, 10 bgs.		
Boston, 140 brls.		
Rotterdam, 50		
Sodium Chlorate—		
Boston, 75 kgs.		
New York, 50		
Philadelphia, 380		
Rotterdam, 100		
Hamburg, 10		
Riga, 175		
Sodium Silicate—		
Rio de Janeiro, 13 brls.		
Malta, 7 cks.		
Strontia—		
Hamburg, 50 t.	7 c.	£400
Rotterdam, 2		20
Konigsberg, 1		10
Strontium Nitrate—		
Vera Cruz, 5 c.		£6
Sulphur—		
Boston, 100 t.	4 c.	£426
Montreal, 15		68
Sulphuric Acid—		
Smyrna, 4 c.	3 q.	£3
Superphosphates—		
Stettin, 1,182 t.	5 c.	£1,839
Rochford, 355	1	1 q. 796
Nantes, 68	3	1 120
Marseilles, 30	2	3 71
Canary, 5	2	2 9
Havre, 80	1	3 180
Yarnish—		
Hong Kong, 10 cs.		
Antwerp, 20 cks.		
Demerara, 10		
Leghorn, 16 pks.		
Manila, 5		
Naples, 4		

MANCHESTER.

Week ending August 25th.

Aniline Colours—		
Hamburg, 10 kgs.		
Rotterdam, 4 cks.		5
Rouen, 3 dms.		
Aniline Oil—		
Antwerp, 10 dms.		
Rotterdam, 10		
Aniline Salts—		
Antwerp, 10 pns.		
Caustic Soda—		
Alexandria, 60 dms.		
Creosote—		
Treport, 2 cks.		
Creosote Salts—		
Antwerp, 29 cks.		
Glue—		
Antwerp, 10 cks.		
Rotterdam, 10		
Magnesium Chloride—		
Bombay, 25 dms.		
Naphtha—		
Hamburg, 9 dms.		
Treport, 99 cks.		
Pitch—		
Antwerp, 210 t.		
Sodium Bicarbonate—		
Treport, 63 kgs.		
Tunis, 10		
Sodium Stannate—		
Rouen, 3 cks.		
Tar Oil—		
Antwerp, 10 cks.		4 dms.
Toluol—		
Rotterdam, 17 dms.		
Yarnish—		
Boulogne, 1 cs.		
Zinc Chloride—		
Rouen, 6 brls.		

HULL.

Week ending August 21st.

Ammonium Sulphate—	
Stettin, 1,000 bgs.	

Bleaching Powder—		
Stettin, 20 cks.		
Caustic Soda—		
Stettin, 19 cks.	6 dms.	
Trieste, 30		
Wyburg, 40		
Chemicals (otherwise undescribed)		
Antwerp, 1 ck.	1 dm.	
Amsterdam, 49 brls.		
Bremen, 10 pks.		
Christiania, 19	184 slbs.	
Gothenburg, 12	cs. 11	
Hamburg, 32	187	
Helsingfors, 5		
Rotterdam, 50	15	
Stockholm, 11		
Stettin, 31	2	
Wyburg, 2		
Cottonseed Oil—		
Antwerp, 907 c.		
Amsterdam, 435		
Copenhagen, 34		
Hamburg, 1,699		
Konigsberg, 33		
Rotterdam, 517		
Stettin, 331		
Trieste, 100		
Dyestuffs (otherwise undescribed)		
Rotterdam, 6 cks.		
Stettin, 3	3 cs. 147 bgs.	
Linseed Oil—		
Antwerp, 17 c.		
Amsterdam, 298		
Aalesund, 21		
Bordeaux, 35		
Christiania, 96		
Christiansund, 13		
Copenhagen, 34		
Drontheim, 56		
Hamburg, 235		
Stavanger, 56		
Manure—		
Riga, 2,434 bgs.		
Stolpmunde, 552 t.		
Ochre—		
Hamburg, 3 cks.		
Paint—		
Gothenburg, 1 ck. 1 cs.		
Painters' Colours—		
Antwerp, 13 cks. 3 cs.	2 dms.	
Christiania, 4	62	21 pks.
Copenhagen, 1	5	2
Drontheim, 10		
Gothenburg, 1		
Hamburg, 16	2	5 dms.
Rouen, 21		
Riga, 1		
Rotterdam, 18		9
Stockholm, 38	1	
Stettin, 16		3,000 c.
Soap—		
Hamburg, 2 cs.		
Stettin, 1		
Tallow—		
Stockholm, 48 cks.		
Tar—		
Antwerp, 3 cks.		
Amsterdam, 6		
Copenhagen, 10		
Rotterdam, 5		
Stettin, 5		
Yarnish—		
Ghent, 1 ck.		
Hamburg, 4		
Stettin, 17		

GLASGOW.

Week ending August 26th.

Ammonium Carbonate—		
Drontheim, 5 c.		
Ammonium Sulphate—		
Valencia, 126 t.	12 3/4 c.	
Amsterdam, 102	7	
Hamburg, 70	19	
Anhydrous Ammonia—		
Brisbane, £160		
Bleaching Powder—		
Sydney, 5 t.	1 1/2 c.	
Carbolic Acid—		
Calcutta, £27		
Chemicals (otherwise undescribed)		
Christiania, £12		
Coal Products—		
Creosote Oil, £125		
France, 110		
U.S.A.,		
Naphthalene, 9 t.		
Riga, 9 t.		

Pitch		
Canada, £117		
Bombay, 54		
Tar		
U.S.A., £43		
Hamburg, 673 brls.		
Calcutta, 98		
Canada, 43		
Riga, 120		
Bombay, 49		
Coal Products (otherwise undes.)—		
Hamburg, £509		
Copperas—		
Bombay, £118		
Cream of Tartar—		
Sydney, £28		
Dyestuffs (otherwise undescribed)		
Canada, £107. 11s.		
Extracts—		
Barcelona, £62		
Malanay, 67		
Canada, £96. 16s.		
Glue—		
Canada, £56		
Iron Oxide—		
Guayaquil, £29		
Lead Nitrate—		
Rotterdam, £10		
Canada, 50		
Litharge—		
Montreal, £243		
Paint—		
St. John's, N'd., £24		
B. Ayres, 58		
Sydney, 59		
Bombay, 27		
Colombo, 23		
Calcutta, 141		
Painters' Colours—		
Cape Town, qty.		
Hobart, £123		
Sydney, 93		
Calcutta, 1175		
Paraffin Wax—		
Barcelona, 213		
Bordeaux, 31		
Fiume, 100		
Valencia, 48 cs.		
Amsterdam, 30		
Potash Salts—		
Mexico City, £284		
Potassium Bichromate—		
Barcelona, £1,202		
Rouen, 301		
Antwerp, 93		
Stockholm, 213		
Potassium Chlorate—		
Sydney, £166		
Soap—		
Calcutta, 2 t. 14 3/4 c.		
Sodium Bichromate—		
Barcelona, 11 t. 19 c.		
Venice, 2 1 1/4		
Rouen, 10 14		
Antwerp, 2 1 1/4		
Starch—		
Rotterdam, 14 c.		
Tallow—		
Rotterdam, 14 t. 5 c.		
Treacle—		
Cape Town, 3 t. 10 c.		
Amsterdam, 8		
Christiansund, 10 9		
Christiania, 1 4		

TYNE.

Week ending August 21st.

Alkali—		
Bergen, 2 t. 17 c.		
Rotterdam, 5 15		
Christiania, 6 8		
Alum Waste—		
Odense, 10 t.		
Christiania, 10 3 c.		
Horsens, 10 1		
Alumina Hydrate—		
Antwerp, 5 t.		
Antimony—		
Hamburg, 2 t.		
Antwerp, 1 4 c.		
St. Petersburg, 10		
Barium Carbonate—		
Hamburg, 1 t. 5 c.		
Bleaching Powder—		
Hamburg, 4 t. 17 c.		
Copenhagen, 65 1		
Antwerp, 20 5		

Rotterdam, 28 10	
Abo, 80 3	
Bergen, 15 3	
Christiania, 15 16	

Carbolic Acid—

Rotterdam, 7 c.

Caustic Soda—

Pernau Town, 21 t. 5 c.

Hamburg, 7 5

Antwerp, 14 15

Rotterdam, 10 2

Aalborg, 4 4

Abo, 65 14

Christiania, 2 6

Fluor Spar—

Gothenburg, 51 4 c.

Guano—

Genoa, 10

Litharge—

Copenhagen, 6 c.

Antwerp, 2 t. 16

Abo, 2 14

Magnesia—

Odense, 8 c.

Antwerp, 1

Magnesium Oxide—

Christiania, qty.

Manure—

Genoa, 5 t.

Veile Town, 32 10 c.

Paint—

Rotterdam, 5 c.

Hamburg, 2 t. 13

Copenhagen, 8 13

Antwerp, 8 5

Abo, 8 8

Bergen, 3

Christiania, 3

Pyridine—

Hamburg, 1 c.

Soda—

Christiania, 21 t. 19 c.

Oporto, 11 14

Rotterdam, 45 16

Abo, 20 18

Sodium Sulphate—

Bergen, 470 t. 10 c.

Surte, 11 11

Abo, 11

St. Petersburg, 20 3

Sulphur—

Antwerp, 5 t. 2 c.

Gothenburg, 65

Superphosphate—

Genoa, 135 t.

Kastrup, 732

Helsingborg, 1,140

White Lead—

Copenhagen, 3 t. 19 c.

GOOLE.

Week ending August 18th.

Alkali—		
Ghent,	1 ck.	
Benzol—		
Boulogne,	48 cks.	
Chemicals (<i>otherwise undescribed</i>)		
Amsterdam,	2 cks.	
Rotterdam,	24	
Coal Products (<i>otherwise undes.</i>)—		
Antwerp,	1 cs.	
Boulogne,	{ 6 cks.	4 pks.
	10 tins	2 dms.
Ghent,	10 cks. 1	
Hamburg,	62	5
Rotterdam,	104	
Dyestuffs (<i>otherwise undescribed</i>)		
Ghent,	3 cks.	
Manure—		
Antwerp,	249 bgs.	
Ghent,	150	
Rotterdam,	83	

PRICES CURRENT.

WEDNESDAY, SEPT. 1ST, 1897.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary

Acids:—

	£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/6	& 8/6
" Glacial	"		40/-
Arsenic S.G., 2000°	"	1	4 0
Fluoric	per lb.	0	0 3 1/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0 10
" (Cylinder), 30° Tw.	"	0	3 0
Nitric 80° Tw.	per lb.	0	0 1 3/4
Nitrous	"	0	0 1 3/4
Oxalic	nett	0	0 3 1/2
Phosphoric, 1750°	"	0	0 11 1/2
Picric	"	0	0 11
Sulphuric (fuming 50 %)	per ton	15	10 0
" (monohydrate)	"	5	10 0
" (Pyrites, 168°)	"	3	0 0
" " 150°	"	1	5 0
" " (free from arsenic, 145°)	"	1	7 6
Sulphurous (solution) S.G. 1025	"	3	0 0
Tannic (pure)	per lb.	0	1 2 1/2
Tartaric	"	0	1 1 1/2
Arsenic, white powdered	nett	per ton	22 0 0
Alum (loose lump)	"	4	10 0
Alumina Sulphate (pure)	"	4	2 6
Aluminoferri	"	2	3 6
Aluminium (Ingot metal 98/99 1/4 %	nett	"	148 0 0
Ammonia, Anhydrous	per lb.	0	1 3
" 880=28° B.	"	0	0 2 1/4
" " =24° B.	"	0	0 1 3/4
" Carbonate	nett	"	0 0 3
" Muriate	per ton	18	0 0
" " (sal-ammoniac) 1st & 2nd	per cwt.	33/-	& 31/-
" Nitrate	per ton	31	0 0
" Phosphate	per lb.	0	0 3 1/2
" Sulphate (grey) London	per ton	7	15 0
" " (grey) Hull	"	7	15 0
Aniline Oil (pure)	per lb.	0	0 7 1/2
Aniline Salt	"	0	0 7
Antimony	per ton	29	15 0
" (tartar emetic)	per lb.	0	0 9
" (golden sulphide)	"	0	0 10
Barium Chloride	per ton	6	10 0
" Carbonate (native)	"	3	10 0
" Sulphate (native levigated)	"	42/6	to 65/-
Bleaching Powder, 35 %	nett	"	6 7 6
" Liquor, 7 %	"	3	10 0
Bisulphide of Carbon	"	12	0 0
Chromium Acetate (crystal)	per lb.	0	0 6
Calcium Chloride	per ton	2	2 6
China Clay (at Runcorn) in bulk	"	15/-	to 30/-

Coal Tar Products and Dyes:—

Alizarine (artificial) 20 %	nett	per lb.	0-0 6 1/4
Magenta	"	0	3 9
Anthracene, 30 % A, f.o.b. London	per unit	per cwt.	0 0 6
Benzol, 90's	"	per gallon	0 1 11
" 50/90	"	"	0 2 1
Carbolic Acid (crude 60°)	per gallon	0	1 11
" (crystallised 40°)	per lb.	0	0 7 1/2
" (liquid 95/97%)	per gallon	0	1 0
Creosote (ordinary)	"	0	0 2 1/2
" (filtered for Lucigen light)	"	0	0 3
Crude Naphtha 30 % @ 120° C.	"	0	0 11
Grease Oils, 22° Tw.	per ton	2	15 0
Pitch, f.o.b. Liverpool or Garston	"	1	0 0
Solvent Naphtha, 90 % at 160°	per gallon	0	1 7
Copper	per ton	48	16 3
" Sulphate	"	16	10 0
" Oxide (copper scales)	"	44	10 0
Glycerine (crude)	"	30	0 0
" (distilled S.G. 1250°)	"	60	0 0
Iodine	nett, per oz.	0	0 7 1/2
Iron Sulphate (copperas)	per ton	1	10 0
" Sulphide (antimony slag)	"	2	0 0
Lead (sheet) for cash	"	14	12 6
" Litharge Flake (ex ship)	"	15	15 0
" Acetate (white	"	22	0 0
" " brown	"	15	0 0
" Carbonate (white lead) pure	"	16	15 0
" Nitrate	"	19	0 0

Lime, Acetate (brown) (ex ship)	per ton	5	0 0
" (grey) (ex ship)	"	8	0 0
Magnesium (ribbon and wire)	per oz.	0	2 3
" Chloride (ex ship)	per ton	2	10 0
" Carbonate	per cwt.	1	17 6
" Calcined Magnesia	per ton	8	0 0
" Sulphate (Epsom Salts)	per ton	2	15 0
Manganese, Sulphate	"	16	0 0
" Borate	per cwt.	2	10 0
" Ore, 70 %	per ton	3	10 0
Methylated Spirit, 61° O.P.	per gallon	0	1 8
Naphtha (Wood), Solvent	"	0	2 9
" " Miscible, 60° O.P.	"	0	4 0

Oils:—			
Cotton-seed	per ton	16	15 0
Linseed	"	18	0 0
Stearine	per ton	22	0 0
Phosphorus (yellow)	per lb.	0	2 2
" (red)	"	0	2 8
Potassium (metal)	per oz.	0	3 7
" Bichromate	nett	per lb.	0 0 4 1/2
" Carbonate, 90% (ex ship)	per ton	16	10 0
" Chlorate	per lb.	0	0 4
" Cyanide, 98%	"	0	0 10 1/2
" Hydrate (Caustic Potash)	per ton	23	15 0
" " (Caustic Potash) 75/80 %	"	20	0 0
" " (Caustic Potash) 70/75 %	"	19	10 0
" Nitrate (refined)	per cwt.	1	1 6
" Permanganate	per cwt.	3	15 0
" Prussiate Yellow	per lb.	0	0 5 1/2
" Sulphate, 90 % (ex ship)	per ton	9	15 0
" Muriate, 80 % (do.)	"	8	10 0
Silver (metal)	per oz.	0	1 11 1/4
Sodium (metal)	per lb.	0	2 11
" Carb. (refined Soda-ash) 48 %	nett	per ton	4 15 0
" " (Caustic Soda-ash) 48 %	"	"	4 5 0
" " (Carb. Soda-ash) 48 %	"	"	4 0 0
" " (Alkali) 58 %	"	"	3 17 0
" " (Soda Crystals)	"	"	2 5 0
" Acetate (ex-ship)	"	12	0 0
" Arseniate, 45 %	"	14	7 6
" Chlorate	per lb.	0	0 4 1/2
" Borate (Borax)	net, per ton	14	15 0
" Bichromate	per lb.	0	0 3 1/2
" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	"	8	15 0
" " (74 % Caustic Soda)	"	8	5 0
" " (70 % Caustic Soda)	"	7	10 0
" " (60 % Caustic Soda)	"	6	10 0
" " (pure liquor 90° Tw.)	"	3	15 0
" " 77/78 % powdered (99 % hydrate)	"	12	10 0
" Bicarbonate	"	6	10 0
" Hyposulphite	"	5	0 0
" Manganate, 25%	"	15	0 0
" Nitrate (95 %) ex-ship Liverpool	per cwt.	0	7 4
" Nitrite, 98 %	per ton	27	10 0
" Phosphate	"	10	10 0
" Silicate (glass)	per ton	4	10 0
" " (liquid, 100° Tw.)	"	3	7 6
" Stannate, 40 %	per cwt.	3	2 9
" Sulphate (Salt-cake)	per ton	0	19 0
" " (Glauber's Salts)	"	1	7 6
" Sulphide	"	6	15 0
" Sulphite	"	5	0 0
Strontium Hydrate, 100%	"	10	15 0
Sulphocyanide Ammonium, 95 %	per lb.	0	0 6
" Barium, 95 %	"	0	0 4
" Potassium	"	0	0 6
Sulphur (Flowers)	per ton	7	10 0
" (Roll Brimstone)	"	6	10 0
" Brimstone: Best Quality	"	4	12 6
Superphosphate of Lime (26%)	"	2	5 0
Tallow	"	19	0 0
Tin Crystals	per lb.	0	0 4
" English Ingots	per ton	64	10 0
Zinc (Spelter)	"	17	5 0
" Chloride (solution, 100° Tw.)	"	4	17 6
" Sulphate, Crystal	"	5	2 6

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Vol. XXI.

Contents.

	PAGE		PAGE
The Dangers of Ineptitude.....	161	The Glucose Trust	167
Visit to Lever Bros' Oil Works ...	162	Coal Gas and Water Gas.....	167
The Patent List	163	The Nickel Mines of Ontario	168
Abstracts of Latest Complete Spec-		Trade Notes	168
ifications	163	Tar and Ammonia Products	168
In Praise of Russian Petroleum.....	163	Miscellaneous Chemical Market ..	169
The American Natural Gas Conflict ..	164	Report on Manure Material	169
The Board of Trade and Com-		The Metal Markets	169
mmercial Intelligence.....	164	Liverpool Oil and Colour Market..	169
Correspondence	165	Hull Paint, Oil, and Colour Report ..	169
Selected Correspondence	165	West of Scotland Chemicals	169
The Manchester Culvert Scheme.....	166	Tyne Chemical Report	170
American Competition in the British		New Companies.....	170
Iron Trade	166	Imports.....	170
The Glasgow Sewage Scheme	166	Exports	172
A User's Views on Paints	167	Prices Current	176

LATE ADVERTISEMENT.

MANUFACTURER'S CHEMIST, who visited Southend on Monday, September 6th, took tea on the Pier, etc. Will he kindly communicate with company met there, in strictest confidence. Important business prevented 7.15 train.—Box 180, Sell's Advertising Offices, 167, Fleet-street, London, E.C.

Notices.

All communications for the *Chemical Trade Journal* should be addressed, and Cheques and Post Office Orders made payable to—

DAVIS BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

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NATIONAL TELEPHONE, 3060.

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THE DANGERS OF INEPTITUDE.

IN returning again this week to the discussion of the Manchester culvert scheme, we think we may be excused, because the points we wish to deal with, and what will be said thereon, apply equally to the discussion of almost all public questions by the public. No one is infallible, but only those behind the scenes can have any idea of the injury done to a public scheme by the careless letters addressed to the press by persons who make a display of thoughtless ignorance which amounts to wantonness itself. It is for this reason, and not from any desire to raise a smile at the expense of an estimable worthy we are wholly unacquainted with, that we give prominence to what follows.

In a recent issue the *Liverpool Journal of Commerce* reported the meeting of the Manchester City Council at which the culvert scheme was adopted. The headings adopted, however, were unfortunate. The first was "Manchester and its Sewage," running on into a subtitle of "To be Emptied into the Mersey." That nothing of the sort is contemplated nearly everybody—even the editor of the *Standard*—knows by now. The unwisdom of such misleading head lines is shown by the fact that they call forth such effusions as the following, which appeared in a subsequent issue of the same paper:—"An esteemed correspondent writing upon this subject remarks: If the effluent is to be allowed to enter the Mersey at all states of the tide, it would create an unbearable nuisance, but if the effluent is pent up and the sluices opened at high water only, the mischief would be minimised. *The precipitated mud is to be treated chemically, but no mention is made of deodorising the effluent. The effluent will, therefore, remain obnoxious, and none the sweeter by parting with its concocted slush.*" (The italics are ours.) "Liverpool is an extensive maritime port, and the authorities ought to take the question into impartial consideration on behalf of those who work on the water, but with no animus against Manchester, the Corporation of which has a difficult task to perform."

It must be a very highly "esteemed" correspondent who ventures to write such twaddle about a subject he is manifestly quite ignorant of. In point of fact the precipitated mud is to be treated mechanically not chemically, while the chemical precipitation of the mud constitutes essentially the act of deodorising the effluent, in that the matters which give rise to malodours on subsequent putrefaction are for the most part removed. This worthy correspondent seems to have become confused between the treatment of the sludge and the effluent that arises from the treatment of the crude sewage.

With regard to the remainder of the sentence we have italicised we must confess that we are not equal to its intellectual pressure. The chemical treatment of the sewage may not produce a perfect effluent, but that an effluent, how-

ever filthy, should be "none the sweeter" for being freed from even the smallest amount of that mysterious mixture, "concocted slush," is a puzzle that defies solution. According to our ancient friend, Euclid, the whole is greater than the part, but no matter how small the part removed, the whole no longer possesses its original magnitude. This estimable correspondent evidently either studied a very ancient edition of Euclid, or else the Revised Version.

We much appreciate the last piece of advice as to there being no *animus* against Manchester, and we are quite willing to give credit for the best intentions by taking the words in sober earnest.

If they have been spoken in such a spirit the author of this communication will see the force of the following argument.

If Liverpool, which is bigger than Manchester in both the matter of population and self-estimation, is turning as it does its untreated sewage into the Mersey, the comparatively clear effluent from the treated sewage of such a pigmy city as Manchester will at the worst only tend to dilute their own sewage, and minimise the effect on the Mersey.

As a matter of fact, if the Manchester effluent could be turned into the Mersey to-morrow unknown to Liverpool, and allowed to run for a month we defy the analyst, the sanitarian, or the faddist to detect the difference in the tidal reaches of the river. It is only a blind, therefore, for Liverpool to pretend that it must busy itself in this question, solely on behalf of those who work on the river. If there is to be any opposition let it be straight from the shoulder and manly, like that from Warrington. The extravagant language of the latter may be indiscreet seeing that it will be their turn next to stop polluting the canal, but all the same, whatever else their policy may be it at least has the recommendation of honesty.

In this matter we do not wish any special leniency to be displayed towards Manchester, but it is necessary for those citizens, whether in Manchester or Liverpool, who wish to discuss the culvert scheme to thoroughly acquaint themselves with it before they fly into print. When criticising such a scheme, the too prevalent use of that elastic excuse—"It's near enough," only tends to confusion. It is a waste of time, and worse, to write in denunciation of a scheme which only exists in the writer's imagination.

We publish this week a long letter which sets forth views contrary to those we expressed last week, and we shall welcome more from any other capable critics, but we would urge all those who wish to help in the solution of this sewage problem to take warning from the literary meanderings of the correspondent we quote. If this does not result in conviction, see Terry in "Love in Idleness," and then a full appreciation of the late Sir Isaac Holden's wisdom in only speaking about subjects he was master of, will be inevitable and the lesson ineffaceable.

VISIT TO LEVER BROS'. OIL WORKS.

ACCEPTING the invitation of Mr. W. H. Wilks, M.L.A. for Balmain North, and by kind permission of Mr. J. P. Gray (general manager in Australia for Lever Brothers), a number of gentlemen, many of whom are closely identified with the commercial, pastoral, or industrial life of the community, recently paid a visit to the new oil-works at Balmain, New South Wales, erected at a cost of about £50,000, and opened by Messrs. Lever Brothers, at the beginning of the year. A strong party from Parliament House, augmented the number of visitors. The party travelled to the site of the works by steamer, and were met on landing by Messrs. J. P. Gray (general manager), W. Meggett (works' manager), and Mr. F. Rhodes (shipping manager), by whom they were conducted over the establishment. They were first

shown an ingenious contrivance, resembling an elevated railway, by the aid of which the discharging of the raw material from the ship's side is greatly facilitated. The copra arrives in bags, but much oftener loose in the hold of an island trader. From the receiving store, a large apartment capable of holding thousands of tons of copra, the party passed into the mills proper, and watched the process of extracting the oil from the coconut. The mills work night and day. About 10,000 tons of copra, valued at £110,000, are treated annually. Seventy hands are employed constantly. The average yield of coconut oil from the material treated is over 60 per cent. The residue, converted into oil-cakes, finds a ready sale among pastoralists and dairy farmers. No refining is needed. As the oil drops from the presses, it is pumped into a couple of huge reservoirs erected close to the wharf. From here it is drawn off into casks, and shipped to the firm's soapmaking works at Port Sunlight. The members of the party made a thorough inspection of the works, and expressed themselves as being much impressed with the importance of the new industry. Subsequently the visitors were entertained by Messrs. Lever Brothers' representatives.

Mr. J. P. Gray, on behalf of Messrs. Lever Brothers, thanked those present for attending. It would be found that the establishment of the works which they had inspected would confer a lasting benefit upon the pastoral and agricultural industries of the colony. In conclusion, Mr. Gray announced the receipt of a cable from England to the effect that the new South Wales Premier was to open a new bridge at Port Sunlight, the headquarters of Messrs. Lever Brothers in England.

Mr. Haynes said that as a member of the House he was glad to have had an opportunity of being present and seeing for himself the progress of the great industry founded by Messrs. Lever Brothers. As one of the representatives of a country constituency, and one closely identified with the agricultural industry, he considered that the firm which Mr. Gray represented by the establishment of their oil works had been of greater assistance to the dairying industry than even the Department of Agriculture. The oil cake used as food for the dairy herds had been followed by most marvellous results as far as the development of the butter trade was concerned. In New South Wales they were at last awakening to the importance of the oil industry, and it was necessary they should, lest they were displaced by the other colonies. An increase of fully one-third had taken place in the butter yield. He was glad to see the establishment of such an industry in the port of Sydney, and he was firmly convinced that New South Wales would come to regard it as one of the most striking proofs of her productive growth that had taken place within the last twenty-five years.

Mr. Wilks proposed "Success to Lever Brothers," and said the establishment of the oil industry had been a good thing for the colony generally, and he hoped that Lever Brothers' spirited example would be the means of inducing other British capitalists to invest their money in works of a reproductive character on the foreshores of Port Jackson. The oilcake as fodder had come to be looked upon as an important item by the pastoralist. It meant that adverse seasons and the consequent scarcity of natural food supplies which a drought engendered, would be more successfully combated, and the pastoralists' gain would be the colony's gain. It was a healthy sign that the firm intended duplicating their present plant, for it meant that they had come to stay. The firm was deserving of the thanks of the community for their pluck and enterprise, and he wished them every success.

Mr. Meggett responded on behalf of Messrs. Lever Brothers, said that they were always glad to welcome visitors to the works, and more especially those representing the colony of New South Wales. He was pleased if what they had seen was either instructive or interesting. They were firmly convinced of the importance of oilcake to the pastoralists. In England 2,000,000 tons of it was consumed annually; and had it not been for its introduction, the British farmer of to-day, he contended, would be non-existent—Mr. Campbell, M.L.A., also spoke of the value of oilcake to the dairying industry.

Alderman Murdoch (Mayor of Balmain) dwelt upon the stimulus given to trade and settlement in the borough by the erection of the works. The success of Lever Brothers' enterprise, said the speaker, meant the success of the district and the whole colony.

Mr. Rhodes (manager of the shipping department) proposed a vote of thanks to Mr. Wilks and those members of the Assembly who had accompanied him. The speaker during the course of his remarks pointed out that consequent on the founding of the oil industry, a direct shipping trade had been opened up between Sydney and Liverpool—This concluded the proceedings, and the party then returned to town by steamer.

AN UNREFORMED REFORMER.—A warrant was issued at Coatbridge last week, for the arrest of Mr. A. S. Fleming, of the Albion Chemical Works, on a charge of forgery to the extent of £20,000, by means of bills on the Commercial and Union banks. Mr. Fleming has taken a prominent part in all social reform in Coatbridge.

The Patent List.

This list is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of E. Davis and Alfred R. Davis, who report professionally the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Structure of Matches. S. and I. Newburg. 19,418. August 23.
 Soap. F. Arledter. 19,429. August 23.
 Oxygen for Internal Use. J. Y. Johnson. 19,442. August 23.
 Coaring Composition. A. Cawood. 19,494. August 24.
 Curing Carbides. J. W. Keneval, C. A. Spofford, and J. H. Mead. 2. August 24.
 Ing Carboys, etc. T. Ryan, jun., and J. W. Owen. 19,562. August 24.
 g Iron Oxide for the Absorption of Hydrogen Sulphide. F. M. Ney. 19,599. August 25.
 cture of Paint. T. C. Carré. 19,617. August 25.
 Consuming Furnaces. T. R. Berkley. 19,718. August 26.
 ments in Obtaining Gutta-percha. R. J. Friswell and Brooke, son, and Spiller, Ltd. 19,727. August 26.
 ments in Obtaining Gutta-percha. R. J. Friswell and Brooke, son and Spiller, Ltd. 19,728. August 26.
 ng Gutta-percha and Using Bye-products. 19,729. August 26.
 cture of Varnish. J. E. and C. S. Bedford. 19,736. August 27.
 g Sewage. W. Noton. 19,747. August 27.
 Consuming Furnace. A. Badger. 19,848. August 28.
 g Apparatus. E. du Bois. 19,874. August 28.
 m Garbage and other Refuse. L. G. Harris. 19,887. August 28.

TRACTS OF LATEST COMPLETE SPECIFICATIONS.

These abstracts are specially prepared for the Chemical Trade Journal. RIGHTS of publication are RESERVED. This is the earliest of abstracts of Chemical and allied patents accessible to the

and Means for Effecting the Absorption of Chlorine Gas, applicable in the Manufacture of Chlorates and Bleaching Liquor. R. Clarke and the United Alkali Co., Ltd., both of G11, Exchange-ings, Liverpool. Eng. Pat. 20,068. September 10, 1896.

Absorption of pure chlorine in milk of lime or magnesia is easy but when the chlorine is mixed with inert gases, as in the case of lime produced by the Deacon process, the difficulty of absorbing is great. This invention provides a suitable apparatus. The gas passed up towers arranged in series, and fitted with baffledown which the milk of lime flows. One cubic foot of milk of lime sufficient for 50 to 100 cubic feet of gases. The liquor leaving from the towers passes into agitators, and is pumped thence, a cooler, back into the towers until saturated. In the preparation of chlorates, the milk of lime may be of such concentration that the liquor shall test 50° to 60° Tw. Where bleaching liquor produced, a weak milk of lime testing of 7° Tw. must be used, care to avoid saturating the liquor with chlorine. The gases are led through the towers by a steam jet, or other device, and travel in opposite direction to the milk of lime. There are two diagrams, of the plant in plan and elevation, the former indicating the pumps and connections.

Improved Process for Denitrating Acid which has been used in Nitro-glycerine Manufacture. G. Kynoch and Co., Ltd., and A. T. Ing, both of Lion Works, Witton. Eng. Pat. 22,718. October 13, 1896.

Object is to remove the nitrated carbonaceous matter left after nitro-glycerine has been skimmed off. The acid is run on to some tier in a closed spherical vessel. The heat generated by the acid decomposes the carbonaceous matters, and when the position is once started the heat of the same makes the process easy if care is taken to regulate the inflow of acid. There are drawings showing the apparatus used, which is exceedingly simple.

Means in Connection with the Elimination of Arsenic from Alloys. B. Thomas, 4, Bryn-terrace, Llanelli, and J. T. Thomas, Kefield-place, Llanelli. Eng. Pat. 17,941. August 13, 1896.

Molten copper is treated in a reverberatory furnace with a flux consisting of compressed air. As a flux soda ash, nitrate of soda, or good grade of copper is used. Preference is given to the first. Nitrate causes more trouble in the subsequent treatment of the slag, and its greater, while copper oxide, though equal to soda ash in many respects, brings more copper into the slag. An apparatus is described, by aid of which the flux and compressed air can be added simultaneously into the furnace. It is claimed that by this means ten to fourteen tons of copper, containing 1.0 to 1.25% arsenic, can be treated in twelve hours, to produce a copper testing with only a trace of arsenic.

Process for the Manufacture of Lead Sulphite for Use as a White Lead Pigment. A. C. J. Charlier, 107, Breadalbane-terrace, Hill-street, Glasgow. Eng. Pat. 19,788. September 8, 1896.

Finely ground lead oxide, mixed into a paste with water, is treated with sulphur dioxide in air-tight vats under a pressure of 10 to 20 lbs. per sq. inch, the paste mixture being stirred by agitators when necessary, and kept at a desirable temperature by steam coils. Sulphite of lead is formed, which salt is suitable for a white pigment, having great covering power. As an alternative a mixture of sulphur and carbon dioxides may be used so as to form a white lead consisting of carbonate and sulphite. When basic sulphite of lead is produced it is neutralized with sulphuric acid to form a mixture of lead sulphite and sulphate.

Improvements in the Manufacture of Calcium Carbide and the like, and in the Method of Using the same in Lamps or Generators. F. H. Smith, The Limes, Dunblane, N.B. Eng. Pat. 13,103. May 27, 1897.

The carbide is powdered and pressed into tablets or pills after moistening with oil. The pills are fed automatically into water at any desirable rate, so as to produce a regular supply of acetylene. As for keeping purposes the pills are coated with wax or varnish, they are passed over an automatic scratching device which breaks the coating.

IN PRAISE OF RUSSIAN PETROLEUM.

NO ACCIDENTS—COMPARE "ROYAL DAYLIGHT."

THE annual report of the chemical testing station of the city of Breslau, Germany, for the fiscal year 1895-96, contains an interesting opinion on the suitability of the different kinds of petroleum, with special reference to the illuminating power of Russian oil.

"The Russian petroleum," says the report, "as sold by the Nobel Company, is a product very carefully rectified, and showing a remarkable uniformity in its composition. We consider this article the best that is at present in the market, apart from the so-called fancy oils, of course. It is a peculiar fact that it is the general opinion that this oil could not be burned in ordinary lamps, and that specially-constructed burners were necessary for it. We have burned Nobel oil in our ordinary lamps during the whole winter of 1895-96, and we can again give the assurance that the above opinion is erroneous. It is to be deplored that retailers in this city carry no Russian oil, and the fact that it can be procured from the wholesale trade only, makes its use in the household inconvenient. To verify our statement we have asked the opinion of the municipal illuminating inspectors who have for several years used Russian petroleum exclusively for the lighting of parks and promenades. Their answer, in short, was as follows:—In the fiscal year of 1893-94, the consumption of Russian oil by the municipality of Breslau amounted to 71,500 kilograms (about 500 barrels). It has proved very satisfactory. No explosions occurred with any of the 700 lamps in use. The flame gave a bright white light. The lamps, in order to produce the same illuminating effect, did not consume any more Russian oil than American oil.

AN INTERNATIONAL WRONG.—The current issue of the *British and South African Export Gazette* contains a long article based upon the evidence given by Sir Donald Currie, M.P., Mr. C. H. Wilson, Mr. W. Garland Soper, and other shipowners and merchants, before the Merchandise Marks Act Committee. Our contemporary clearly demonstrates that the action of the German Government by granting preferential railway rates and bounties to shipping lines trading with South Africa and the Levant is inimical to British interest, and it enforces the pressing necessity for appealing to the British Government to insist upon the abrogation of this injurious system when drafting the next commercial treaties with Continental Powers. The vast interests involved would seem to render it imperative that immediate steps be taken to remedy what the paper in question aptly terms "An International Wrong."

OIL ENGINES AND THE WAR OFFICE.—The War Office are devoting particular attention to the question of stationary oil engines with special reference to their use in forts, martello towers, coast barracks, and the like. In some instances the erection of electrical searchlights awaits the choice of a reliable oil motor in places where gas and steam power are not readily available. Orders have already been given out for six dozen small horizontal engines of one or two types, but much larger contracts await the discovery of an engine that overcomes certain defects inherent in the various makes hitherto placed on the market. Within the last day or two an officer of the battalion of Submarine Miners has been occupied in examining, in multi, one or two new types of oil engines now on exhibition in London, and has sent in an elaborate report upon them to Pall Mall. Great strides have been made during the last two years in the perfecting of stationary engines run with common petroleum.

THE AMERICAN NATURAL GAS CONFLICT.

AN ANTI-TRUST OBJECT LESSON.

THE Indiana gas field is just now the scene of a pretty fight between opposing combinations of capital. The particular storm centres at present are Indianapolis and Peru; but the plan of battle is comprehensive, and involves all that part of Indiana where natural gas is sold for private consumption. When natural gas was first discovered in Indiana, the Standard Oil interests and the coterie of capitalists known as the Brice syndicate were prominent in its development. But it was too uncertain a matter for heavy investments, and the great bulk of the work of developing and piping the gas to the cities in the vicinity of the field fell upon those who had undertaken to do the work with popular subscriptions. The business proved enormously profitable, and it built up a number of considerable fortunes. In 1890, according to the *New York Tribune*, E. C. Benedict and his friends, commonly known as the "Benedict crowd," the "Jerzmanowski syndicate," and the "Central Trust clique," turned their attention to natural gas. They had been in artificial gas for years, and their operations in New York Consolidated Gas, Chicago Gas, and Welsbach Light, and other similar corporations, are well known to the financial world. Like all conservative capitalists, they were afraid of natural gas, but thought it well worth while to try the experiment in Indianapolis, where a fuel gas plant would probably be valuable, even after the exhaustion of natural gas. Then they had a theory that a single corporation conducting the artificial and natural gas plants of a city could practise certain economies and make money.

In Indianapolis the artificial gas plant and one of the two natural gas plants were owned practically by the same people. An agent from New York purchased the two for £400,000. It was said at the time that the purchasers were the Jerzmanowski syndicate; but Baron Jerzmanowski soon retired to the background, and C. F. Dieterich came to the front at the head of the syndicate. The thing was an experiment, and Jerzmanowski had grown too rich to have his name connected with a failure. While a few financiers have known that Benedict, the Fergusons, and others of the "Benedict crowd" were behind the deal, the general public has known nobody else in it than the Dieterich syndicate. When the deal was first begun Dieterich was not a capitalist of any magnitude, but was a gas expert who had long been in the employ of the Benedict people. The Indianapolis experiment worked well. After paying £400,000. for the plant, the speculators bonded it for £530,000, and let the bonds go to brokers at 90, with a bonus of £60. stock with every £200. bond. The stock was £400,000, so that the sale of all the bonds with this bonus still left the promoters enough stock to control. The bonds went to customers at 95. They are thirty-year six per cents. The interest has been promptly met, and the stock has paid a dividend of 12 per cent. right along. The bonds were issued in 1890, and all floated by 1892, and the syndicate was ready to widen its operations in the Indiana field.

Within the next three years the artificial and natural gas plants in nearly all the larger towns in the northern part of the State were bought up, and the same policy followed at Indianapolis was pursued. They paid liberal prices for the properties, but they loaded them still more heavily with securities, and have always succeeded in getting rid of the bonds. Mr. Brice and his associates were heavily interested in most of these properties, and thought that they were unloading them at tremendous figures; but when they saw with what ease the new purchasers floated their bonds they got it into their heads that they had sold out too cheap. Mr. Brice very early found out what the new move meant, and, after allowing the new-comers to make half their purchases, squeezed them hard on the properties that were necessary to complete the scheme. However, the Benedict people went merrily on. The plants at Lebanon, Frankfort, and Crawfordsville, both artificial and natural, were taken in and reorganised as the Indiana Gas Company, with £200,000. of bonds and £200,000. of stock. In bonding these new properties they went a little further than they did in Indianapolis, and gave them a wider margin over the purchase price. Next, the plants at Logansport, Peru, and Decatur were taken in and organised as the Logansport and Wabash Valley Gas Company, with bonds of £350,000. and stock of the same amount. Mr. Brice permitted them to buy up Peru, Wabash, and Decatur before his agent would talk about Logansport, and then, after they had issued their notices of the proposed reorganisation, the price of the Logansport plant jumped at the rate of £2,000. a day while the negotiations were in progress.

Then they advanced upon Lafayette. Here the stock in the plants was widely distributed, and it cost them about £140,000. to gather it in. The concern was floated, however, with £200,000. of bonds and the same amount of stock. Then came the last and largest purchase outside of Indianapolis. The Fort Wayne and Bluffton plants were purchased and consolidated, with £500,000. of bonds and £500,000. of stock. Some of these properties have paid better than others, but the interest upon all the bonds has been promptly met, and

the stocks have yielded from 8 to 12 per cent. Upon these properties, which cost the syndicate about £1,100,000. in cash, they have issued £1,780,000. in bonds and £1,600,000. in stock. They have floated the bonds, getting 90 for them, and have given along with them some £520,000. in bonuses, cleaning up a profit of about £500,000. cash, and still retaining over £1,000,000. of the stock—enough to control the properties. All this money-making has excited some envy, and during the last year a strong combination has been effected to bear these securities. It is composed largely of the people who sold these plants to the syndicate. The head and front of it is Allen M. Fletcher, who was almost the sole owner of the gas properties. He and his brother are private bankers, with a reputed fortune of about £600,000., and they have with them the Frenzel group of bankers representing another large aggregation of capital. Through the local newspapers at Indianapolis and in other cities they have raised the cry of cheaper gas, with such effect that both political parties took it up in Indianapolis, and the Council passed an ordinance reducing the price of artificial gas from \$1.25 per thousand to 75c. The company has resisted this in the Federal courts, and obtained a temporary injunction against the enforcement of the ordinance by giving a bond to insure rebates if the case goes against them. In Peru the franchise is about to expire, and they are holding public meetings to impress the Council that gas must be cheaper. At the same time, the agitation is going on in all the other cities, and the bear campaign is active all along the line. It is a very pretty fight, and it seems evident that the people should finally obtain cheaper gas through it.—*Financial News*.

THE BOARD OF TRADE AND COMMERCIAL INTELLIGENCE.

A CIRCULAR has been addressed to the various chambers of commerce throughout the United Kingdom by Sir Courtenay Boyle, as chairman of the Commercial Intelligence Committee, stating that the Board of Trade has appointed a committee, consisting partly of officials, partly of commercial representatives, to consider and advise as to the best means of procuring and diffusing among British traders at home more prompt and accurate information than is at present available from public sources respecting supply and demand in colonial and foreign markets, and as to the desirability of instituting some exhibition or museum of samples. Various representations and suggestions have been made from time to time to the Board of Trade, the Foreign Office, and the Colonial Office, and her Majesty's Government are anxious to do all that can reasonably be done to meet the wishes of British traders and to further their interests; but is necessary in the first instance to ascertain to what extent representative associations, as well as the individual traders, are prepared to co-operate with the Government; in other words, whether there are, by common consent, definite wants to be met and defects to be remedied, in meeting and remedying which a moderate expenditure of public money may reasonably be incurred. Accordingly questions have been drawn up for submission to the various chambers of commerce, and chambers are invited to give them careful and early attention, and to send the answers to the secretary to the Commercial Intelligence Committee, Board of Trade, 7, Whitehall Gardens, S.W., if possible before the 1st of October next.

It is added that the committee propose to take oral evidence during the autumn.

The questions appended to the circular are:—

1. Do you consider that British traders can be more adequately supplied with commercial intelligence?
2. Do the present consular and colonial reports, in your opinion, require amending or supplementing in any points, and would it be an advantage to the commercial public that these reports should be summarized so as to collect together all the information bearing on this or that particular subject or industry?
3. Do you consider that substantial advantage, justifying expenditure of public money, would result from
 - (a) The appointment of special commercial agents in the British colonies, and as is already the case to some extent in foreign countries?
 - (b) The employment of special agents on special missions to this or that country in connexion, first with one industry, then with another?
 - (c) The establishment of a commercial inquiry office?
 - (d) The establishment of a museum of samples with local museums affiliated?
4. How far do you consider it of importance to obtain very speedy information? In other words, is it probable, in your opinion, that telegraphic intelligence will constantly be in demand?
5. Can you make any further suggestions bearing on the subject of the inquiry?

Correspondence.

do not hold ourselves responsible for the opinions expressed by our correspondents.

ULVERT SCHEME AND THE JOINT COMMITTEE.

(To the Editor of the Chemical Trade Journal.)

Your leading article of the 4th inst. criticising the Joint Mersey and Irwell Committee, calls for some remarks. You will be aware that the Local Government Board recently held an inquiry as to the Salford Scheme, which proposed to deal with its sewage by precipitation, artificial filtration, and rejected the scheme because they considered it necessary for Salford to have much more land for land disposal, and that in consequence Salford was not given the borrowing for any scheme. The Joint Committee desire that there should be elasticity, and that where suitable land cannot be obtained, the use of artificial filtration to remove the albuminoid ammonia should be adopted and sanctioned.

The Local Government Board have a much larger experience than the River Pollution Boards in existence, and they say that precipitation alone does not produce an effluent that is good enough to be discharged into a river, much less into a canal where the water is backed up and the current slow. The other River Boards are working in the same direction, as the result of their experience is that precipitation is unsatisfactory.

Figures obtained by the official representatives of the Manchester Corporation in 1896 prove that only from 40 to 50% of the albuminoid ammonia is removed by precipitation, while by the subsequent filtration 76% is removed, and by land filtration from 84 to 95% is removed.

The whole question is, therefore, is it reasonable to require Salford to repair the damage it does other people by polluting the

water, raise the question of expense, and I am willing to admit that, in the circumstances, that is a fair argument.

The Dalmarnock sewage works in Glasgow have been at work, and have filtered their "tank effluent" for three years, and the quantity has increased from 7,000,000 gallons daily in 1894-1895, to 10,000,000 gallons daily in 1896-1897, and the cost of filtration of the cost of coke for the filters has been reduced from 6s. 6d. per million gallons to 6s. 10d. per million gallons.

I am told the cost of the new culvert is estimated at £258,000, and the interest will amount to £7,095 per annum, or £19. 8s. 6d. on this on 24,000,000 gallons daily of sewage is equal to 16s. 6d. per gallon of effluent! This leaves a splendid margin for the cost of filter beds. The Manchester Corporation have had their filters at work in the hands of those whose opinion of filtering is variable, but I am advised that the filters are quite able to do their work to-day as at the beginning. The City Surveyor says the filters have been accurately measured after a period of continued use, and it is found that they now contain (the italics are mine) on an average when full about 1,350 gallons each. Whereas at first they held 1,000 gallons. What is the meaning of this? It can be none other than that the solids in the filter contents have increased, and the liquids, if the facts have been accurately measured; but the question is whether the filter purify the tank effluent at the same rate of flow as in the beginning of the experiment?

The Manchester Corporation were allowed to send the whole of their sewage into the Estuary, a proposal that finds favour with a member of the Council, I could understand their consent to the outlay, but the contention that they will not try filtration of their sewage, and will ask Parliament to get outside the jurisdiction of the Joint Committee, seems like an attempt to bluff the Joint Committee. The Local Government Board, who are acting on the same lines as the Joint Committee, I am much mistaken if Parliament will give to the Manchester Corporation powers they will not also give to Salford and other local authorities, and then, where is the water for the Ship Canal to come from? I do not admit that undue haste is not reasonable when dealing with such complex and intricate problems, and I agree that something may be done by granting time for the full inquiry promised by the Local Government Board, and, for the present, allowing the sewage of all the places that produce an effluent no worse than the tank effluent of the Manchester Sewage Works to enter the rivers and the sea. The only objection I see to this course of action would be the progress and the danger of retrogression. It is quite false to say that the appearance only of the effluent at its junction with the water of the Ship Canal, and this any chemist will appreciate. That is the only objection at present, and the Corporation of the city of Manchester on the subject of sewage effluent is open to doubt, and, I hope, no longer, your objection on that head is removed. Parliament will in due time elucidate this matter thoroughly, and I am thankful that the subject will receive the careful sifting that is

sure to take place in the Committee Rooms of both Houses.—Yours, &c.,

DAVID BASIL HEWITT

(a representative of Cheshire County Council on the Joint Committee).

Oakleigh, Northwich, 6th Sept., 1897.

P.S.—I append the actual cost at Dalmarnock for the past year, the sewage treated being 9,670,463 gallons daily.

Precipitation with chemicals	...	...	£1	7	4 ¹⁰ / ₁₀
Pumping	...	...	0	9	11 ¹⁰ / ₁₀
Filtration, including coke	...	...	0	6	10
Sludge Pressing	...	...	0	12	4 ¹⁰ / ₁₀

Per million gallons. £2 16 6¹⁰/₁₀

The filtration is the smallest item of cost.

Selected Correspondence.

THE MANCHESTER AND SALFORD SEWAGE SCHEMES.

To the Editor of the Manchester Guardian.

SIR,—As reported in the "Guardian," my allusion to the standard of purity of the Mersey and Irwell Joint Committee reads rather ambiguously. I did not say that the Joint Committee know nothing about their own standards, but that the Manchester Corporation and other outside bodies know little or nothing definite respecting the arbitrary standard which the Joint Committee set up. What I, and I think I may say the whole body of sewage chemists (in the north of England, at any rate), contend is, that it is disastrous in every way that the Joint Committee should, as it obviously does, refuse to face the question of candidly stating what is the irreducible minimum of its requirements, and that public bodies under the jurisdiction of the Committee should, partly in consequence, engage in fencing with the question, a feeling of general unrest and dissatisfaction being created all round. Of one thing I have always felt certain, namely, that the Rivers Committee of the Manchester Corporation have no other object than to use the best practicable means to attain purity in their sewage effluent. It should surely be evident to every thinking person that what is "practicable" includes the element of cost; yet here we have sensible business men like the members of the Joint Committee forcing an enormously expensive scheme on the Manchester Corporation, and probably upon Salford, because it will enable those bodies to escape from the jurisdiction of the Joint Committee. I am sure that the technical adviser of that Committee, Sir Henry Roscoe, has no desire to see such a state of things, but would much prefer an honest co-operation between the parties concerned, such as made the Alkali Act so successful. It is a lamentable state of things that an irreconcilable attitude between bodies of business men should result in a proposed expenditure of hundreds of thousands of pounds by a highly-rated city like Manchester, and I feel that I cannot cease to protest against it.—I am, &c.,

HARRY GRIMSHAW.

Clayton, Sept. 2, 1897.

To the Editor of the Manchester Guardian.

SIR,—It is amazing that in all the schemes for sewage disposal now being discussed the idea of united action by the two boroughs so closely connected should be utterly lost sight of. Salford has a scheme under consideration which they think will be effective without going to the expense of a culvert to the sea. On the other hand, Manchester, despairing of being able to effect that object, contemplates the spending of a quarter of a million in the formation of a culvert. Now, if Salford has hit upon an effective plan, why should not Manchester try the same plan? On the other hand, should there be a doubt as to the effectiveness of the Salford plan, what is to prevent Salford joining Manchester in the formation of a culvert large enough for both? If Manchester and Salford were one corporation (as they ought to be), there would be no such folly contemplated as separate systems of sewage. Other local authorities might also join in the undertaking. My firm belief is that the sewage difficulty will never be solved until the whole country is divided into districts according to the river watersheds and the sewage conveyed in culverts right down to the sea coast, and there treated in such a way as might be thought expedient.—Yours, &c.,

Monton.

JOHN CLARKE.

NITRATE STATISTICS.—The Permanent Nitrate Committee has issued the following amended circular for September.—1. Total exports to Europe, August, 1,447,000 quintals; loading for Europe, 1st September, 2,240,000 quintals. 2. Imports Europe, August, 50,350 tons. 3. Deliveries Europe, August, 39,410 tons. 4. Visible supply, Europe, 1st September—stocks and afloat—358,370.

THE MANCHESTER CULVERT SCHEME.

OPPOSITION BY WARRINGTON.

THE monthly meeting of the Warrington Town Council was held on Tuesday evening. The minutes of the Rivers Committee contained a resolution "That the Town Clerk and Borough Surveyor be instructed to report upon the Manchester sewage scheme, and that they be authorised to take such steps as they may consider necessary to protect the interests of the Corporation." Mr. Roberts, chairman of the Committee, in moving the adoption of the minutes, said that at that stage he did not propose to say anything further than that it behoved the Rivers Committee to take the assistance of the ablest men available. They admitted that Manchester was in a very tight place, but it occurred to many that what they were proposing to do was not the proper thing to do. The duty of the Committee was to see that the interests of Warrington, which were as important to Warrington as those of Manchester were to Manchester, were not infringed upon in the slightest degree by anything which a powerful and wealthy neighbour like Manchester might try to do.—Mr. Bennett, in seconding the motion, said he would like to sound a note of uncompromising opposition to the Manchester scheme. They were falling back upon their original scheme of setting down their filthy effluent under Warrington's very nose, and of interfering with the already deficient water flow in the river. It was a scheme which Warrington ought not to listen to for a moment, and they must oppose it from first to last, and Manchester, in spite of her immense power and her immense impudence, would be forced to drop the scheme. They had been poisoned in Warrington long enough. It was said that Warrington refused the privilege to Manchester which she enjoyed herself, but Warrington had given the distinct promise and undertaking that as soon as the authorities higher up the river had taken their sewage from the river, they, too, would treat their sewage in a different manner, and not allow it to enter the river.—Councillor Burton remarked that if the scheme was passed, and Manchester was allowed in dry seasons to abstract the water as it proposed, there would be no water left in the river at all.—The minutes were carried unanimously.

AMERICAN COMPETITION IN THE BRITISH IRON TRADE.

THE *New York Engineering and Mining Journal* states that the latest instance of American competition in the British iron trade is found in a recent adjudication of the contract for certain material for the Central Underground Railway in London. This is a new underground line, to be worked by electricity. The contract was for steel channels, angles, and other material for the cars, which are to have the steel frames frequently used in England, and the time of delivery, as well as the price, was understood to be an important point in deciding the adjudication. When the bids were opened it was found that an American concern had not only made the lowest prices for the steel, but had also offered to make its delivery at least three months ahead of any of its British competitors. The American company received the contract, in spite of some protests against sending the order abroad. There are other instances in point, including the letting of an important contract for Egypt to an American bidder. It is known also that some important Continental orders have gone to America in addition to the large contracts for rails taken some months ago. Besides these there is now a steady sale in Great Britain for certain American products; steel tin-plate bars from Pittsburg are found in many of the mills of Wales and Staffordshire, and steel billets are shipped in increasing quantities, as manufacturers realised the low price and high quality of American products. Another late instance is found in the fact that inquiries have been received in Pittsburg for steel pipes for the system of works which is to supply water in the Coolgardie goldfields in Western Australia. These things are seriously disturbing the British iron trade. German and Belgian competition is an old story, and is met with but little concern, especially on foreign orders. The American rivalry, however, is new; and, moreover, it is from a quarter where the British ironmasters have not expected rivalry for their own trade. The practical exclusion from the American markets they have long accepted, secure in their trade with other countries; but it is a different matter for the American mills to step in and undersell them on their own ground. The fact is, says this American journal, that American competition has come to stay, and will have to be reckoned with in all future calculations of the British trade. American mills have proved their ability, with the best machinery and the best skilled labour, to furnish iron and steel either in raw or manufactured forms at as low prices as any of their competitors, or lower; and to turn out large quantities of material in manufactured form in a shorter time than any of them.

THE GLASGOW SEWAGE SCHEME.

A LENGTHENED memorandum on the main drainage of Glasgow has recently been issued by Mr. A. B. McDonald, the city engineer, for the consideration of members of the Sewage Committee, who will have the immediate charge of the construction of the works authorised by the Corporation Sewage Act, 1896. In the outset, Mr. McDonald refers to the various schemes which have been proposed since 1860 for dealing with the city sewage. He also gives details with regard to the treatment of sewage at the Dalmarnock Works, which have been in successful operation for three years, with results that compare favourably with any that have been obtained in this or any country. "The unquestionable success," he continues, "of the treatment of the sewage at Dalmarnock removed all the uncertainty regarding chemical methods which caused the Town Council to hesitate acting on the advice of Mr. Bateman in 1881, and the Corporation resolved in the autumn of 1895, by a large majority, to proceed with the works necessary for the collection and disposal of the remainder of the sewage of the northern bank of the river, and instructed the preparation of a Bill to obtain the requisite authority from Parliament. Great physical changes had meanwhile taken place within and beyond the city since the date of Mr. Bateman's report, so that it was impossible to adhere to the precise lines recommended by him. The scheme had to be deviated to accommodate itself to local circumstances, but as far as possible the main features were preserved. The scheme included in the Bill dealt with the sewage of the remaining municipal area not included in the Dalmarnock undertaking on the north bank of the river, with the burgh of Partick, the districts of Temple, Knightswood, Jordanhill, Scotstounhill, and Yoker, with landward parts of the county of Renfrew, and of the county of Dumbarton, and with the burgh of Clydebank. The whole area included is 7,575 acres, which may be increased if the different authorities interested are agreed. The probable ultimate population of the area is estimated at 676,600 persons. The leading features of the scheme are the construction of an outfall sewer which will convey the drainage of the higher levels of Glasgow and Partick to Dalmuir, where it will be chemically treated at the works, which are to be constructed there on the lands acquired for that purpose by the Corporation; the construction of an intercepting sewer for collecting the drainage of the lower levels of the city; the construction of an intercepting sewer to collect the drainage of the lower levels of the burgh of Partick, which, by a westward extension to Blawart Hill, may be made the means of draining also that part of the county of Renfrew, extending to 392 acres, which does not gravitate to the outfall sewer; a connecting sewer to deliver the sewage of the Glasgow and Partick intercepting sewers into the outfall sewer from the pumping station at the River Kelvin; an intercepting sewer which will convey to Dalmuir the drainage of the burgh of Clydebank, and which, by an eastward extension to the neighbourhood of Blawart Hill, may be made the means of draining also flat parts of the county of Renfrew and of the county of Dumbarton, extending to 1,084 acres. The total area to be drained by the outfall sewer is 6,759 acres, which may be increased by arrangement to 7,151 acres; of this latter area 5,521 acres, or 77 per cent. of the whole, will be carried to Dalmuir without pumping. The whole sewage carried by the outfall sewer will be delivered at such a height above tide level as will enable it to be discharged at once into the precipitation tanks. Great importance is attached to this circumstance, which is regarded as a dominant principle of the scheme. The whole length of the outfall sewer is 9 miles, $2\frac{1}{4}$ miles being within the city, 2 miles within the burgh of Partick, 2 miles in the county of Renfrew, and the remainder in the burgh of Clydebank and county of Dumbarton." After describing in detail the outfall and intercepting sewers, the city engineer proceeds:—"The Parliamentary estimate was £600,000, made up of £450,000. for sewers and sewer connections, sewage works, works on the river bank at Dalmuir, pumping stations at Partick and Clydebank, and an allowance for contingencies. £150,000. was provided for land and wayleaves. It being deemed expedient to conjoin this undertaking with the Dalmarnock Sewage Works, the borrowing powers were fixed at £700,000. to incorporate the existing debt. The Bill was strongly opposed in Parliament, there being no fewer than sixteen petitions lodged against it, at the instance of railway companies, local authorities, landowners, and others, the most of whom supported their opposition by the evidence of engineering experts and local witnesses before Committees of both Houses of Parliament. Reasonable arrangements were effected with some of the opponents on terms that did not prejudice the principles of the Bill, and the objections of the other petitioners were set aside by the Parliamentary Committees, and the Bill passed. The leading features of this scheme are now sufficiently elaborated to enable the Corporation to enter on negotiations with the local authorities whose co-operation it is desirable to ensure, and it is intended to meet with some of them on an early day. The prosperous issue of these conferences opens up the vista, in a not distant future, of a complete solution of the great problem that has engrossed the public mind and baffled the ambition of municipal leaders for nearly half a century."

A USER'S VIEWS ON PAINTS.

consumers are showing increased interest in the technical questions affecting the value of paints for interior and exterior wall as upon implements and wherever else the cost and durability covering are worthy of consideration, is indicated by the which is given to the subject in the general as well as the papers. A recent number of the *Nebraska Farmer* contains extensive and carefully written contribution to the subject, which affords the readers of that journal more information upon it than they have ever before been able to obtain, and certainly is ordinarily afforded any class of consumers. Referring to it for a vehicle to bind the pigments used to the materials to be applied, it says:

linseed oil alone should be used; no coal oil should be mixed. It is often done to cheapen, for coal oil has no binding properties, eventually evaporates, leaving the pigment with nothing to the surface. No animal or other vegetable oils should be used, as they do not dry, and the surface will not become hard and durable. Coal oil, a frequent adulterant, should be used, for this makes the paint brittle, thus easily chipping or cracking off.

It shall be combined with pure linseed oil to make the best. The experience of many centuries points to pure white lead. Lead has the faculty of mixing most readily with linseed oil. The oil to dry by combining with it, the oil is rendered water-proof, the resulting dry film for a long time remains elastic, so adapts itself readily to expansion and contraction of the surface, and has no tendency to scale off.

There are additional reasons why pure white lead is the best. Among others, it has greater opacity than any other, therefore hiding the surface better; consequently, fewer coats are required. We have said that the cost of paint is not very different, it is the labour of applying that is expensive. Therefore, pure white lead can cover as well with two coats of white lead paint as with four coats of other paint, it follows that the lead paint is the best by far. Any substance that is added to white lead, except for the purpose of colouring, diminishes in some way the value of the

only protection the buyer has is to insist on having pure white lead, the guarantee of some reputable maker, whose brand he knows. The adulteration of pure white lead by zinc, barytes, or other substances is a most common one. If such mixtures were honestly labeled, stating what they were, and the consumer or party owner bought them as such, no objection could be made; but they are often sold as pure white lead, though chemical analyses have made show that they contain none, or, at best, but a small amount of white lead. If not sold directly as pure, some misleading name is added, such as 'White Star Lead, St. Louis,' etc., the purpose being to deceive and induce the buyer to think he is getting pure white lead.

In the last fifteen or twenty-five years, a large demand has been felt for what are known as ready mixed paints, or paint prepared in oil and dried ready for use, which appeals to the user as a convenience. Some makes of these appear to give fair satisfaction, but the very general complaint as to their want of durability has caused the whole class to fall somewhat into disrepute. The cause for this is hard to find. We have previously shown that the base of paint for general use should be pure white lead and pure linseed oil. Now white lead in its nature is so heavy an article, so that its particles (it is this that gives it its great value as a covering) that it cannot be held in suspension for any length of time in linseed oil. As a matter of fact, most ready mixed paints consist of white lead, other and cheaper substances, inferior as to covering power, being substituted therefor, and in order to enable the paint to be applied thickly, various driers containing turpentine and benzine are added. The effect of these is to thin the oil and render it less capable of holding the various pigments in suspension. To counteract this tendency to settle, the oil is treated to make it thicker, alkalies and such form soap or emulsions with the oil being frequently used. It is not difficult, then, to see why such paints so often prove disappointing to the user; nor does the expense stop here, because if the paint is to be repainted with a poor article and secure the best results, the old paint must first be entirely removed. The moral of all this is, the best is the cheapest in the long run. Results are obtained, greater durability and satisfaction, besides saving time the best is actually the cheapest.

HARTLEPOOLS PULP AND PAPER CO., LTD.—This company declared a dividend for the half-year ended 31st July at the rate of 10 per cent. per annum; £1,000. has been added to the reserve fund, and the balance of profit has been added to the amount carried forward, which will now be £816.

THE GLUCOSE TRUST.

A CHICAGO despatch, referring to the consolidation of the Glucose Trust, which was consummated in the Lake City, says:—"Deeds were made out transferring at least four large plants to the trust, and it is reported that the transactions involved exceed 12,000,000 dols."

"The dissolution of the injunction that had prevented the sale of the Peoria plant of the American Glucose Company to the trust, left the way clear for the powers behind the trust. William Hamlin (president of the American Glucose Company) and Cicero Hamlin, both of Buffalo, New York, and the heaviest stockbrokers in the company, were on hand. Behind the closed doors were exchanged the equivalent of 3,000,000 dols., thus passing to the trust the two large glucose factories at Peoria and Buffalo owned by the American Glucose Company."

"There also were signed the articles of surrender by the Hamlins, by which they, as representing the American Glucose Company, agreed not again to engage in the manufacture of glucose within 1,000 miles of Chicago. This, if they keep faith, will effectually shut them out of the corn belt. It is understood, also, that at the same time final arrangements were made for the transfer of at least two other large glucose plants to the trust. These are the Peoria Grape Sugar Company, of Peoria, and the Chicago Sugar Refining Company's plant, of Chicago, which is situated at West Taylor-street and the river. The latter is the largest glucose plant in the world, and was transferred to the trust by two deeds, filed in the Recorder's office. Edward L. Johnson was the intermediary party. The consideration mentioned is 6,250,000 dols."

"A firm in the trade says of the new Glucose trust:—"We are informed that it stands something like this, not claiming to be exact—say \$14,000,000. preferred stock and \$26,000,000. common. For every \$1,000 cash paid in the subscribers receive 10 shares of preferred stock and about 14.28 shares of common stock. The subscription value is considered about \$75. for preferred and \$18. for common. Twenty-five per cent. premium (\$1,250) is now said to be bid for the subscription certificates, and the opening value, when listed, is expected to be, say, \$90. for preferred and \$30. for common (\$1,320). The preferred pays 7 per cent. cumulative, and also shares equally in earnings with the common after 7 per cent. is paid on the common. We understand that \$32. is already bid for the common. People generally have vague ideas about glucose and its uses. There is a practicable unlimited export demand for glucose, and it is used very largely by brewers and confectioners, and in America enters as a mixture into nearly all syrups and molasses. It is made from corn—a pure and healthy foundation. It is not used for adulterating sugar, although it can be used by unprincipled persons if pure sugar becomes sufficiently high in price."

—*Financial News.*

COAL GAS AND WATER GAS.

THE following is the text of the letter from the Local Government Board on the subject of coal gas and water gas which was read at the last meeting of the Stockport Town Council:—"Sir,—I am directed by the Local Government Board to advert to the application of the Town Council of Stockport for sanction to borrow £36,039 for gasworks purposes, and to state that the Board have further considered the question in connection with the representations which were made to the President on the occasion of his receiving a deputation from the Town Council on the subject. The Board understand that the works which are now proceeding are urgently needed, and that it is requisite they should be proceeded with quite independently of the question whether the gas supplied should be coal gas only or a mixture of coal and water gas. The Board are satisfied from the information which they have received that the supply of water gas might be attended with serious results, and they have in contemplation the appointment of a departmental committee to consider the whole question. Some time, however, must elapse, before such a committee would be in a position to report, and, having regard to the urgency of the works now proposed by the Town Council, the Board would be prepared to sanction the loans applied for, providing the Town Council pass a resolution that they will not supply water gas except when mixed with coal gas, and that under no circumstances shall the proportion of water gas in the mixture of coal gas exceed one-fourth, and for the supply of water gas, even under these conditions, the Town Council must accept the responsibility. The Board are induced to offer to sanction the loans, subject to these conditions, only by their desire to meet the wishes of the Corporation, and the fact that at present they have no definite information as to the danger attending the use of water gas under such conditions as these. It will, however, be understood that when the committee which it is proposed to appoint have made their report the matter will be subject to the reconsideration of the Board.—Yours obedient servant, ALFRED D. ADRIAN, assistant secretary."

THE NICKEL MINES OF ONTARIO.

THE powerful American syndicate headed by Mr. J. D. Rockefeller is at present endeavouring to "corner" the nickel mines of Ontario. Their attraction to the monopoly-mongers is the anticipation that Great Britain will utilise the output of the mines for armour-plating. Professor Roberts-Austen, the British assayer, who is now in Canada, has undertaken a series of experiments with nickel, and if he reports that they demonstrate the ability of the metal to withstand heavy guns, it is thought certain that the Admiralty will make use of it. The only present obstacle to the newly-formed syndicate securing control of the mines is that some of the present owners are asking higher figures than the purchasers will agree to. The resources at the command of Mr. Rockefeller, of Standard Oil Company or Oil Trust repute, are practically limitless, and the owners feel confident in standing out for liberal terms.

Trade Notes.

PETROLEUM AND THE SHIP CANAL.—The *Rocklight*, the first tank steamer to arrive in the Ship Canal with Russian petroleum, has brought 4,025 tons of oil from Batoum for the Anglo-Caucasian Oil Company. The *Elbrus*, which arrived a month ago, brought 3,600 tons of oil from Philadelphia; and a third tank steamer, the *Darial*, is fixed with a similar cargo from the same port. Next year, it is expected, more than 2,000 tons of oil per week will be imported to Manchester, by way of the Canal. The Ship Canal Company's toll on this traffic between Eastham and Manchester is three shillings per ton.

PRICE'S PATENT CANDLE CO., LTD.—The balance of profit in hand shown by the accounts laid before the general meeting in March was £62,231. 19s. 7d., from which has been deducted dividend 17s. 6d. per share paid March 13th, £32,812. 10s.; reserve fund £10,000.; on account of depreciation on fixed properties, £12,500.; leaving a balance of £6,919. 9s. 7d. The profit of the six months to June 30 last, was £36,763. 10s. 6d., from which deduct income-tax, £1,058. 3s. 4d.; leaving a balance of £35,705. 7s. 2d. Dividend to be declared at the meeting on the 10th inst., 15s. per share, £28,125.; leaving in hand to be carried forward, £14,499. 16s. 9d.

NITRATE DEPRESSION IN CHILI.—The continued depression of nitrate is having a serious effect on the revenue and trade of Chili. Hundreds of workmen have been thrown out of employment in the nitrate districts, and they are being brought south, where, at the present time, there is no demand for labour. The Government is being urged to provide work for these unemployed by starting several useful public undertakings, but as yet it has made no move in this direction. These workmen, accustomed as they are to the high wages of the north, find it very difficult to reconcile themselves to the lower wages prevailing in the south.

STEAM DUST CARTS.—The Chiswick Urban District Council has just commenced the collection of dust and house refuse by motor, the first of two "steam tip waggons" ordered for the purpose having been delivered last week, and set to work immediately. The Chiswick Council is the first local authority to employ motors in this way, and the experiment has excited much interest among other sanitary bodies. So far it has proved very successful. Mr. Ramsden, the surveyor to the district council, reports that a week's experience with one of the cars shows that they are very easily controlled, and far more economical than horse labour. The steam waggon does the work of three ordinary carts, and Mr. Ramsden estimates that the council will save between £500. and £600. a year by the adoption of the new system.

FATALITY AT A CHEMICAL WORKS.—On Monday, Mr. Wynne E. Baxter, coroner, held an inquiry at the London Hospital on the body of Henry Jones, aged fifty-one, a nitric acid maker, of Ducal-street, Bethnal Green.—Elizabeth Jones, the widow, said that the deceased left home at eight o'clock on the 10th of August to go to his work at Messrs. Robbin's, chemical manufacturers, Gibraltar Walk, Bethnal Green. About noon she heard that he had been injured, and while he lay in bed in the hospital he told her that he was carrying a pitcher of acid and went to stand it down, when it tilted over. He tried to save it, and then fell on the tap of a reservoir of nitric acid. The tap broke and the acid poured out all over him. He had worked for the firm for thirty-six years.—George Frazer, in the same employ as Jones, said that at about eleven o'clock he heard the deceased man draw some acid from one of the reservoirs. Shortly afterwards he heard a smash, and on going to the spot found Jones in a stooping position by one of the reservoirs, the pitcher that he had been using being broken. Jones was taken to the water-main and there drenched with water, lime water being subsequently used. He was then removed to the hospital in a cab.—Mr. James Spillane, house surgeon, stated that the deceased man was suffering from burns on both legs, both arms, and the right side of the face. The wounds never healed, but sloughed, and death ensued from exhaustion. The jury returned a verdict of accidental death.

SPANISH MANGANESE EXPORTS.—Sundheim and Duelsch report the following shipments of manganese ore from the port of Huelva for the period from January 1st to July 31st, 1897:

	Metric tons.
To Germany	—
To Great Britain	1,865
To France	2,071
To Belgium and Luxemburg	60,461
Total	64,397

18,218 tons, or 28.29 per cent. of the total were shipped by Sundheim and Duelsch.

THE EXPLOSION AT AIRDRIE.—The report of Captain J. H. Thomson, Inspector of Explosives, to the Home Secretary, on the explosion of gelatine dynamite, which occurred on July 15 at a dwelling-house known as Sutton Bank, at Airdrie, has been published as a Parliamentary paper. Two women were killed and two men injured. The house was occupied by the firm of A. J. Brown and Co. A member of the firm, William Brown, one of the men injured, was thawing the explosive in order to get it ready for use, by placing it in an oven with a fire beneath, when the compound exploded. The course taken, the inspector points out, was simply courting disaster. The accident was due mainly to William Brown's culpable folly. He acted in the face of the emphatic warning printed on every packet of gelatine dynamite. The head of the firm, Alexander Brown, is held not free from blame, since he entrusted so much of the practical work to his brother, William Brown, knowing the latter's ignorance and inexperience. Two grave statutory illegalities were committed, first, the explosive was being kept in unlicensed premises, and second, the "making fit for use an damaged explosive," or "repairing any explosive," is an operation of manufacture, and this may only be carried out in a duly-licensed factory. The question of legal proceedings in respect of the criminal negligence and the statutory offences was referred to the Crown Counsel for Scotland. Appended to the report is a list of the accidents which have occurred in the thawing of nitro-glycerine explosives. It appears that these mishaps are becoming rarer, none being reported in 1896. But, it is added, "It is too much to hope that they will ever cease to happen altogether, so long as there are persons who deliberately disregard all warning."

TECHNICAL INSTRUCTION IN CHESHIRE.—The Technical Instruction Committee of the Cheshire County Council, after considering the applications for grants for technical instruction purposes from the following authorities for the year ending March 31st, 1898, have decided to allocate the following amounts:—Altrincham District Council, £248; Bredbury and Romiley District Council, £20.; Congleton Town Council, £70.; Crewe Town Council, £513.; Dukinfield District Council, £272.; Hoyle and West Kirby District Council, £170.; Hyde Town Council, £480.; Lower Bebbington District Council, £30.; Macclesfield Town Council, £563.; Marple District Council, £40.; Middlewich District Council, £63. 10s.; Northwich District Council, £233.; Neston and Parkgate, £10.; Runcorn £313.; Sale District Council, £237.; Sandbach District Council, £10.; Staleybridge Town Council, £100.; Winford District Council, £180.; Messrs. Brunner, Mond, and Co., on account of rating their works at Winnington and Malkin's Bank, £99. The Committee at their meeting also considered an application from the Union of Lancashire and Cheshire Institutes that the grant to that body should be continued, and it was decided to give a sum not exceeding £100. A deputation attended from the Technical Instruction Committee, Macclesfield, in regard to scholarships. The representations of the gentlemen forming it were listened to, after which a promise was made that the subject should receive careful consideration. The recommendations of the Scholarship Committee with reference to awarding the scholarships in Class 3 in music and to teachers were received, and the organising secretary was empowered to make the necessary arrangements with the schools selected.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols are dull at 2s. 10d. to 2s. 11d. for 90's, and 2s. 1d. for 50/90's. Carbolic acids are quiet, with crude (60%) easier at 1s. 10d. Crystals (40%) remain at 7½d. Liquid in fairly good demand. Naphthas remain as last quoted, both for crude and solvent. Anthracene shows more life, and better things are looked for. Pitch is quoted 17s. to 21s. f.o.b. East Coast. The next few weeks will doubtless give some indication of the prospects of the tar products market during the coming season.

Sulphate of ammonia is quite active at good prices. The market for this article seems to have taken a new lease of life. Values are higher at all ports. The forward inquiry is good, and £8. has been

paid in the North. Buyers seem inclined to doubt the permanency of the advance, but time will show. Closing values are: Beekton £7. 13s. 9d. London outside makes £7. 15s., Liverpool £7. 16s. 3d. to £7. 17s. 6d., Hull £7. 15s., and Leith £7. 15s. to £7. 17s. 6d., all prompt.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade there are no changes of any note affecting the trade as a whole. There is more inquiry, however, for forward deliveries, and some business has been done for 1898 on prices now ruling for bleaching powder, ammonia, alkali, and caustic soda. For prompt delivery quotations remain unchanged. Bleaching powder is in fairly brisk demand for export at £6. 12s. 6d., f.o.b., and for home trade £6. 5s. to £6. 7s. 6d. f.o.r. Ammonia alkali, bags, £3. 17s. 6d. f.o.r. Caustic soda, f.o.b. Liverpool, 10 ton lots, 77%, £8. 15s.; 74%, £8. 5s.; 70%, £7. 10s.; 60%, £6. 10s. net per ton. For home trade prices may be taken 5s. to 10s. per ton lower than these quotations, on prompt and forward business. Bichromate and soda crystals are unaltered. Chlorates remain dull at 4d. and 4½d. respectively for potash and soda. Sulphate of copper quiet for spot delivery at £16. 5s. f.o.b., and firm for forward delivery at £16. 10s. to £16. 15s. per ton. Saltcake steady at 18s. 6d. to 19s., f.o.r. Sulphur £4. 12s. 6d. per ton. Brown acetate of lime rather firm at £5. 2s. 6d., c.i.f.; grey £7. 10s. nett. Other acetates dull. Potash, caustic and carbonate, are quiet, and without recent change in value. Yellow prussiate of potash steady at 5¼d. to 5½d. per lb., and makers are well sold. Cyanide, 99/100%, 10½d. to 10¾d. per lb. Aniline oil and salt are unchanged; the latter is in good demand and firm in price. Ammonia salts generally are dull. White powdered arsenic in good request, and price firm at £22. nett, f.o.r. Garston.

REPORT ON MANURE MATERIAL.

During the past week the market has shown some further improvement. Owing to the continued high range of homeward freights, mineral phosphates are very firm, but manure manufacturers do not seem disposed so far to follow at the advance. For 75/80% Florida, sellers quote 6d. per unit, in cargoes, c.i.f. in U.K., but if a fraction per unit less were bid for a good line business might result. South Caroline and 58/63% Algerian are quoted at 5d. per unit.

In the absence of River Plate cargoes of bones offering there is still no business to report, but there would no doubt be buyers at an advance on last prices paid. The market for bone meal since last report is decidedly firmer, though £3. 15s. per ton would still be cabled for fine Kurrachee, for shipment. On spot £3. 15s. per ton is now lowest for Bombay ex store. Nothing doing in crushed Kurrachee bones, spot being cleared, and sellers requiring too much money for shipment.

Nitrate of soda is quiet, but steady. On spot the quotations are for fine 7s. 6d. and refined 7s. 7½d. per cwt. In the forward position business has become quiet, but sellers are very firm at prices recently realized.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron quiet. Scotch warrants closed at 44s. 7½d.; Middlesbro', 41s. 7½d. cash; and hematite, 47s. 4d. Copper quiet: Chili bars, G.O.B.'s and G.M.B.'s, closed at £49. 1s. 3d. to £49. 6s. 3d. cash, and £49. 8s. 9d. to £49. 13s. 9d. three months. Tin quiet: Straits closed at £61. 6s. 3d. to £61. 16s. 3d. cash, and £61. 17s. 6d. to £62. 7s. 6d. three months. Australian £62. 2s. 6d. English ingots, £65. Lead steady: Spanish, £14. 5s. English, £14. 10s. Silesian: spelter, ordinary, £17. 7s. 6d. Nickel, 1s. 2½d. Antimony, £29. 10s. to £30. Quicksilver: First hands, £6. 17s. 6d.; second hands, £6. 16s. 6d. Copper shares steady: Cape, 2½ to 2¾; Copiapo, 1¾ to 2; Libiola, 2½ to 2¾; Mason and Barry, 2¾ to 3; Rio Tinto, 23½ to 23¾; Tharsis, 5½ to 6½.

GLASGOW, WEDNESDAY.—Market steady, and a small business. Scotch done at 44s. 8½d. to 44s. 7½d. cash; 44s. 7½d. to 44s. 10½d. and 44s. 10d. one month; buyers, 44s. 7½d. cash; sellers 44s. 8d. Cleveland done at 41s. 8d. cash; buyers, 41s. 7½d. cash; sellers, 1d. dearer. Cumberland hematite, buyers, 47s. 4d. cash; sellers, ½d. higher. Middlesbrough hematite, buyers, 48s. 6d. cash; sellers, 49s.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is quiet, and the demand easy. There has been a small business passing at £21. 2s. 6d. for Lagos. Olive being scarce,

with very small offerings, prices remain steady. Linseed is unchanged at 17s. 6d. to 18s. per cwt. for Liverpool makes in export casks. Cottonseed is firm, Liverpool refined now standing at 16s. 6d. to 17s. 3d. per cwt. Castor oil is very steady; good seconds Calcutta figure at 3¼d. to 3½d.; first pressure French 3½d. per lb., ex quay. Tallow is inclined to rise. Resin is steady in price, but there is only a limited amount of business doing. Spirits of turpentine figure at 22s. 6d. per cwt., holders being firm thereat. Petroleum is quiet and unchanged.

CAKES.—West American linseeds have been moving fairly well at an advance to £6. and £6. 7s. 6d. Liverpool makes remain unchanged in value. The scarcity of American decorticated cottonseed has hardened the market, but Liverpool makes of both decorticated and undecorticated are in good demand at old prices. Egyptians are now firmly held for £4. per ton, but business is slow in consequence.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire—common £10., medium £12., best £15.; Derbyshire—common 40s., medium 50s., best 60s.; Welsh—best 90s., seconds 50s., and common 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead: £16. Red lead unchanged. Venetian red: £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide: £22. 10s. to £25.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The markets are very quiet, and hardly so firm as a week ago. The stocks of seed in Hull on the last day of month as against the previous month were: linseed, 22,583 qrs., against 34,878 qrs.; rapeseed, 1,030 qrs., against 1,030 qrs.; cottonseed, 1,820 tons, against 2,507 tons. The imports of seed for the month have been: linseed, 57,187 qrs., against July, 53,820 qrs.; rape seed, 4,484 qrs., against 2,534 qrs.; cottonseed, 7,061 tons against 4,921 tons. Linseed oil is a dull market; sellers, spot, 15s. 9d. cwt.; Sep.-Dec. 15s. 9d.; first four months 16s. 3d. per cwt. naked; boiled and refined £1. to £1. 10s. per ton extra. Refined cotton oil also quiet, spot naked 14s. 7½d., there are buyers; forward, Nov.-April, 14s. 6d.; filtered, £1 per ton extra. Crude 13s. 4½d. naked. Barrels, £1. 10s. and £1. per ton extra. American turpentine £1. 2s. 6d. Castor oil firm, 3½d. to 3¾d. per lb. Olive oil from £29. 15s. for Seville to £32. for Candia. Brown Yorkshire grease, £8. to £9. per ton. Cod oils £16. to £18. per ton. Oleines unchanged. Olive oil soaps, 62% fatty acids, £16. 10s. per ton.

CAKES.—Linseed cakes quiet but steady; 95% pure, £7. 2s. 6d. to £7. 5s.; Russians, £6. 17s. 6d. to £7. Oilcakes, £6. 2s. 6d. to £6. 5s. Cotton cakes firm but in quiet demand: best makes, £4. 2s. 6d. spot and the same Nov.-April; seconds 2s. 6d. per ton less.

PAINTS.—Business quiet. White and red leads unchanged. Mineral colours from £4. to £7. per ton. Lime blue 14s. per cwt.; ultramarine, 3d. to 5d. per lb. Ready mixed paints in 1, 2, 4, and 7lb. tins, £23. per ton. Paint remover, 25s. to 30s. per cwt. Ordinary colours in oil, from £10. per ton. Imperial black varnish, £5. 10s. per ton. Oak varnish, from 5s. per gallon.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

The chief feature in the ordinary chemicals is the temporary scarcity of caustic soda, resulting in an advance upon the article to the mark of from 5s. to 10s. Lead products have also made another rise; but as regards the others there is no change to record. A steady business is being done, particularly in the shipping department. Sulphate of ammonia has fully retained the recent improvement, and the prompt Leith quotation to-day is £7. 16s. 3d. to £7. 17s. 6d. There have been some indications of a desire to resume the practice of buying forward, but without any positive business resulting as yet. Operators have offered up to £7. 17s. 6d. for forward delivery—perhaps a trifle over that—but the easiest of the makers want £8. at least, while some of the stiffer ones stand out for more. Oils and paraffins unchanged except for naphtha (paraffin spirit), which was in demand at 6½d.

Chief prices current are:—Soda crystals, £2. 12s. 6d., nett, Tyne, soda ash, 48/62°, £4. 2s. 6d. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £4. 17s. 6d. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 5s., 70/72° £7. 10s., 60/62° £6. 10s., and cream 60/62° £6. 5s. all nett, Liverpool; bleaching powder, 35/37°, £6. 10s. nett, Tyne; saltcake, 19s. to 20s.; borax, English, refined, £14. 15s. and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for Scotch and English deliveries (for export, 3¾d. nett, f.o.b.).

Glasgow); chlorate of potash, 4d. less 5%, any port; nitrate of soda, 7s. 4½d. to 7s. 9d.; sulphate of ammonia, £7. 16s. 3d., to £7. 17s. 6d. prompt, f.o.b. Leith; salammioniac, first and second white, £33. and £31. nett any port; sulphate of copper, £16. 5s. to £16. 10s., less 5% Liverpool; paraffin scale, hard, 1¼d. to 1½d., and soft, 1½d. per lb.; paraffin wax, 120° semi-refined, 1¼d. to 2d. per lb.; paraffin spirit (naphtha), 6½d. per gallon; paraffin oil (burning), No. 1, 5¼d., and crystal, 6d., at Glasgow and other big centres, for Scotch buyers (English sales a shade lower); ditto (lubricating) 865° £5. to £5. 5s., 885° £5. 15s. to £6. 5s., and 890/895° £6. 10s. to £7. Week's imports of sugar at Greenock were 11,052 baskets cane unrefined, and 5,921 bags beet unrefined.

TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals are quiet, with only a moderate demand.

Soda crystals are scarce at £2 12s. 6d. per ton, gross weight, locally; caustic soda, £7. 10s., and 76/77% £9. per ton; sulphur, still firm at £4. 17s. 6d. to £5. per ton; bleaching powder, 80%, £6. 10s. per ton, nett; hard, £6. 15s. per ton, nett; caustic soda, 76/77%, £9. per ton, nett; do., 70%, £7. 10s. per ton, nett; recovered sulphur, 2 cwt. bags, £5. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. 6d. per ton, nett; do., 52%, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95% crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham salt unaltered at 9s. per ton f.o.b. Tees.

COALS.—Trade is rather duller, and steam coals somewhat weaker in price. Coke is very firm for best qualities. Gas coals rather better. Best Northumberland steam, 8s. 6d. to 9s. per ton; second

qualities, 7s. 6d. to 8s. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; gas coals, 7s. 9d. to 8s. per ton; household coals, 10s. to 11s.; coke, 20s. to 21s. per ton.

New Companies.

Anglo-Italian Talc and Plumbago Mines Co., Ltd.—CAPITAL £50,000 in £10. shares. This company has been formed to acquire the business of E. Brayda and Co., to enter into a certain agreement, and to acquire, develop, work, turn to account, and deal with any talc or plumbago mines, mining rights, lands, etc., in Italy and elsewhere. The subscribers are:—G. C. Dobell, 23, Old Hall-street, Liverpool, merchant; R. B. Dobell, 23, Old Hall-street, Liverpool, merchant; J. H. Bowman, 23, Old Hall-street, Liverpool, merchant; G. Huntriss, 26, Old Hall-street, Liverpool, merchant; F. Norman, 49, Rawson-road, Seaforth, mariner; C. Webster, 165, Derby-road, Bootle, merchant; J. Smith, Woodhey-road, Rock Ferry, surveyor.

Halford Plant and Co., Ltd.—CAPITAL £5,000 in £1. shares. This company has been formed to acquire the business carried on by R. Garner and F. J. Pountney at Warstock, Yardley Wood, near Birmingham, as "Halford Plant and Co.," to enter into a certain agreement, and to carry on the business of manure, fertilizer, fuel and dye manufacturers, chemists and druggists, etc. The number of directors is not to be less than three nor more than four; the first are C. V. Pugh, H. S. Brown, R. Garner, and F. J. Pountney; qualification, £100; remuneration as the company may decide. Registered office, Warstock, Yardley Wood, near Birmingham.

William Robinson and Co., of Clayton.—CAPITAL £15,000. in £10. shares. This company has been formed to acquire and carry on the business of manufacturing chemists, carried on at the Hope Chemical Works, Clayton, Manchester, as "William Robinson and Co.," and to enter into a certain agreement. The subscribers to the memorandum of association are:—W. Robinson, Crabtree-lane, Clayton, Manchester, chemist; W. Rylance, 76, Mosley-street, Manchester, solicitor; D. Wadsworth, Cloughside, Blackley, Manchester, manufacturer; W. Butterworth, Soap-street, Shudehill, Manchester, merchant; J. Alcock, Soap-street, Shudehill, Manchester, merchant; J. van der Vein, Carlton House, Whalley Range, Manchester, chemist; A. Lawton, Manchester-road, Droydsden, traveller. Registered office, Hope Chemical Works, Crabtree-lane, Clayton, Manchester.

IMPORTS OF CHEMICAL PRODUCTS

AT
THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending August 28th.

Acetic Acid —		
Holland, 109 pks.	A. & M. Zimmermann	
E. Indies, 100	R. W. Greiff & Co.	
Acetone —		
Holland, 1 dm.	G. Rahn & Co.	
Germany, 10 cks.	J. M. Steel & Co.	
" 4 3 brls.	Matthews & Luff	
" 15 drs	Thames S. T. & L. Co., Ltd.	
Belgium, 14	A. H. Wintergill	
Alkali —		
France, 100 c.	J. Barber & Co.	
Alum —		
Holland, 132 cks.	Ohlenschlager Bros.	
Antimony —		
Germany, 20 t.	R. Warner & Co.	
Antimony Ore —		
Straits, 30 t.	H. Grey, Junr.	
Asbestos —		
Germany, £14	Craven & Co.	
Barium Chloride —		
Germany, 34 cks.	Petri Bros.	
Barytes —		
Germany, 56 cks.	W. Harrison & Co.	
" 8	R. W. Greiff & Co.	
Holland, 114	J. L. Lyon & Co.	
Belgium, 38 brls.	W. Harrison & Co.	
" 54	J. L. Lyon & Co.	
Camphor —		
Germany, 68 tubs	T. Merry & Sons	
" 3 cks.	T. H. Lee	
Japan, 67 tubs	Lewis & Peat	
" 6 cs.	Hernu, Peron & Co.	
Caoutchouc —		
Singapore, 9 c.	L. & I. D. Jt. Co.	

	60	Prop. Bull Wf.
Ceylon, 25	Prop. Hay's Wf.	
Zanzibar, 14	Hale & Son	
" 105	S. Figgis & Co.	
U. States, 98	W. Balchin	
Aden, 80	Wallace Bros.	
U.S. (Col.), 30	Stiebel Bros.	
Aden, 12	L. & I. D. Jt. Co.	
Penang, 193	Butler's Wf., Ltd.	
Carbonic Acid —		
Holland, 200 pks.	T. H. Lee	
Castor Oil —		
France, 15 brls.	Anderson, Weber & Smith	
Caustic Potash —		
France, 18 drs.	Petri Bros.	
Belgium, 12	A. J. Luke & Co.	
Chemicals (otherwise undescribed)		
Holland, £64	Phillipps & Graves	
" 60	A. & M. Zimmermann	
" 41	T. H. Lee	
Belgium, 43	O. Scholzig	
Sydney, 10	Grimwade, Ridley & Co.	
Germany, 25	Phillipps & Graves	
" 20	L. & I. D. Jt. Co.	
Belgium, 29	T. H. Lee	
Brisbane, 125	L. & I. D. Jt. Co.	
France, 84	Mory & Co.	
Holland, 66	J. Owen	
Germany, 18	H. Lambert	
" 1,611	A. & M. Zimmermann	
Norway, 149	R. Greening	
U. States, 60	L. P. W. Co.	
Cream of Tartar —		
Holland, 18 pks.	Kirkpatrick & Co.	
Spain, 13 cks.	E. & F. Wf. Co.	
Italy, 40	B. Jacob & Sons	
France, 5	F. C. Devon & Co.	
Spain, 10	W. C. Bacon & Co.	
" 8	M. Ashby, Ltd.	
France, 5	W. C. Bacon & Co.	
" 20	W. C. Bacon & Co.	

	5	Blackmore, Leconte & Co.
Belgium, 2	B & F. Wf. Co.	
France, 5	"	
Dyestuffs —		
Argols		
Italy, 1,076 bgs.	B. Jacob & Sons	
Cutch		
Belgium, 49 cs.	Leach & Co.	
Ceylon, 172 bgs.	J. Forsey	
Divi Divi		
E. Indies, 50 bgs.	Walker, Munzie & Co.	
Extracts		
France, 185 cks.	L. J. Levinstein & Sons	
Denmark, 2	M. D. Co.	
Fustic		
B. W. I., 3 t.	Park, Macfadyen & Co.	
Gambier		
Singapore, 1,906 bls.	S. Figgis & Co.	
" 460	Hendrey & Martin	
" 186	633 bgs. Beresford & Co.	
" 414	P. Heydemann	
" 418	G. R. Haller	
China, 730	L. & I. D. Jt. Co.	
Singapore, 939	Prop. Hay's Wf.	
" 1,339	Brown & Elmslie	
" 1,153	Brinkmann & Co.	
Indigo		
E. Indies, 5 cts.	F. Huth & Co.	
Holland, 1	J. Barber & Co.	
Aden, 6 cs.	Wrightson & Son	
E. Indies, 6 cts.	Lewis & Peat	
" 10	L. & I. D. Jt. Co.	
Holland, 5	5 brls. R. Baels & Co.	
Logwood		
B. W. I., 3 t.	Park, Macfadyen & Co.	
Saffron		
Spain, 1 cs.	Scotney & Earnshaw	

Shumac		
Italy, 100 bgs.	H. Johnson & Sons	
Tanners' Bark		
Germany, 33 t.	Dyster, Nalder & Co.	
" 50	Baxter & Hoar	
Natal, 16	Goad, Rigg & Co.	
Farina —		
Holland, 96 bgs.	J. Knill & Co.	
" 100	J. Barber & Co.	
Gamboge —		
Singapore, 20 cs.	L. & I. D. Jt. Co.	
Glucose —		
U. States, 300 pks.	1,800 c. Williams, Torrey & Co.	
" 290	L. Norman & Co., Ltd.	
Belgium, 8	8 Wilson & Furness, Ltd.	
" 500	500 Pearce, Pelly & Co.	
Germany, 200	200 Trier, Meyer & Co.	
France, 200	200 J. Parsons	
U. States, 750	750 E. Thompson & Co.	
" 2,950	2,850 R. G. Hall & Co.	
" 400	400 L. & I. D. Jt. Co.	
" 500	500 C. Wright	
Canada, 600	1,485 R. G. Hall & Co.	
U. States, 1,000	1,000 Ohlenschlager Bros.	
" 1,500	1,500 G. Clark & Son	
" 2,733	4,733 R. G. Hall & Co.	
Glue —		
France, £296	Mory & Co.	
Germany, 510	T. H. Lee	
" 21	Phillipps & Graves	
" 84	J. Barber & Co.	
Belgium, 484	"	
" 115	Burnett Bros. & Sons	

Island, 44 G. Rahn & Co.
 many, 32 W. Harrison & Co.
 many, 116 L. & I. D. Jt. Co.
 France, 22 Van Oppen & Co.
 Belgium, 555 John Cockerill Line
 Island, 93 F. Clayton & Co.
 Austria, 220 Steinhoff, Sons, & Co.
 Island, 180 J. Barber & Co.
 France, 70 H. J. Davies & Sons
Isosial Earth—
 many, 650 A. Haacke
ganese—
 many, 10 t. C. Hoff & Co.
ganese Ore—
 States, 100 t. Wilsons & Furness Co.
ure—
 many, 60 t. Brach & Rothenstein
 France, 14 A. Hunter & Co.
hyl Alcohol—
 many, 4 dms. T. Jones & Co.
 Island, 24 Domeier & Co.
 Indies, 6510 E. Davis & Co.
 Island, 53 G. Rahn & Co.
asses—
 Belgium, 50 pks. 2,950 c. J. R. Francis
 " 290 1,100 Deering & Robottom
 States, 250 1,500 S. Filby
 " 1,500 8,902 J. R. Francis & Co.
e—
 Island, 4 cks. R. Baelz & Co.
 " 12 A. Royle & Willan
 Island, 4 cs. 3 pks. Philipps & Graves
 many, 17 brls. Poth, Hille, & Co.
 Belgium, 17 " "
 Russia, 710 Fellows, Morton, & Co.
 Belgium, 17 T. H. Lee
ibago—
 many, 50 cks. B. Gallaway
 " 69 J. Thredder, Son, & Co.
 " 110 G. R. Haller
ssium Carbonate—
 many, 240 c. Charles & Fox
 " 155 Petri Bros.
 France, 108 J. A. Reid
 " 120 A. Zumbek & Co.
ssium Chloride—
 many, 508 bgs. Bessler, Waechter, & Co.
 " 220 F. W. Berk & Co.
ssium Sulphate—
 Indies, 361 bgs. G. H. Wilson & Sons
etro—
 Indies, 248 bgs. J. W. Cook & Co.
 many, 30 cks. L. & I. D. Jt. Co.
 Indies, 716 bgs. Perkins & Homer
 " 630 Lucas & Spencer's Wf.
 Belgium, 1,840 c. R. Waters
um Sulphate—
 many, 133 cks. Deering & Robottom
ch—
 Island, 35 cs. Philipps & Graves
 Belgium, 100 J. Harrison
 many, 3,730 4 brls. Horne & Co.
 " 210 bgs. R. Bennett & Co.
 States, 260 brls. C. Tennant, Sons, & Co.
 States, 100 L. & I. D. Jt. Co.
 and, 4,018 cs. Little & Johnson
 " 1,200 Volkins & Co.
 many, 300 Seaward Bros.
 Belgium, 60 Sawyer, Sons, & Co.
 France, 400 E. & T. Pink
 and, 302 T. H. Lee
 Belgium, 110 Leach & Co.
 Belgium, 330 C. Tennant, Sons, & Co.
 and, 4 Hernu, Peron, & Co.
 many, 500 E. Olyett & Sons
 many, 70 bgs. Philipps & Graves
 Belgium, 240 cs. T. H. Lee
 many, 120 6 cks. E. & T. Pink
 Belgium, 2,073 " "
 " 314 F. Claydon & Co.
ur—
 5 t. R. Morrison & Co.
 8 F. C. Devon & Co.
 45 G. Boor & Co.
 10 J. Moreton & Co.
uric Acid—
 many, 38 pks. Elkan & Co.
 " 190 E. Davis & Co.

France, 40 Blackwell & Co.
 Germany, 40 " "
Tartaric Acid—
 Holland, 10 pks. Kirkpatrick & Co.
 " 8 B. & F. Wf. Co.
 Belgium, 7 F. C. Devon & Co.
 France, 9 B. & F. Wf. Co.
 Holland, 5 F. C. Devon & Co.
 " 18 G. Boor & Co.
Ultramarine—
 Holland, 11 cs. J. Barber & Co.
 " 2 cks. Philipps & Graves
 Belgium, 5 pks. W. Harrison & Co.
 Germany, 6 Steinhoff, Sons, & Co.
Varnish—
 U. States, 21 pks. Williams, Torrey, & Co.
 " 31 Hernu, Peron, & Co.
 France, 6 H. Lambert
 Germany, 6 Mory & Co.
 France, 23 Suter, Hartmann, & Co.
Verdigris—
 France, 5 cs. A. Fass
White Lead—
 Holland, 2 cks. Randall Bros.
 Belgium, 83 O'Hara & Hoar
 " 90 W. & A. Hampton
 Holland, 34 Perkins & Homer
 Belgium, 20 pks. Burrell & Co.
 " 22 D. C. Thomas & Sons
 Germany, 30 cks. W. A. Ruse & Co.
 " 30 W. G. Clifford
 Belgium, 2 J. L. Lyon & Co.
 Holland, 48 T. & W. Farniloe, Ld.
Wood Pulp—
 Sweden, 600 pks. Alsing & Co.
 Norway, 6,631 London Paper Mills Co.
 Canada, 659 W. G. Taylor & Co.
 Norway, 150 C. S. Lovell
 Canada, 1,050 Ekman Paper Co.
 Sweden, 250 E. & J. W. Goldsmith
 Belgium, 1,777 C. S. Lovell
 Sweden, 272 T. H. Lee
 Germany, 10 London Paper Mills Co.
 " 500 E. J. & W. Goldsmith
 Belgium, 3 639
Zinc Oxide—
 Holland, 25 brls. M. Ashby, Ld.
 " 31 cks. J. Matton
 Germany, 5 Brit. Anti-Foul C. Co.
 " 60 brls. M. Ashby, Ld.
 " 50 cks. W. Balchin, Ld.
 U. States, 220 brls. M. Ashby, Ld.
 Germany, 50 cks. J. Matton

LIVERPOOL.

Week ending August 26th.

Alkali—
 Copenhagen, 1 ck. N. Johansen & Dahl
Aluminous Cake—
 Rotterdam, 90 cks.
Ammonia—
 Rotterdam, 20 cks.
Asbestos—
 New York, 3 bgs. E. W. Bell
Barytes—
 Antwerp, 100 bgs.
 Rotterdam, 45 cks.
Bone Ash—
 B. Ayres, 236 bgs. W. B. Dickinson
Bone Black—
 Philadelphia, 20 brls.
Borax—
 New York, 2,200 bgs.
 Valparaiso, 1,300 sks. Watson Hainsworth
Caoutchouc—
 Havre, 6 cs. Cunard S. S. Co., Ld.
Chemicals (otherwise unclassified)
 Antwerp, 1 cs.
Colours—
 Antwerp, 4 brls. J. T. Fletcher & Co.
 Rotterdam, 8 cks.
Cream of Tartar—
 Bordeaux, 33 cks.
Dried Blood—
 B. Ayres, 175 bgs. W. B. Dickinson
Dyestuffs—
 Alizarine
 Rotterdam, 9 brls.

Catch
 Rangoon, 1,800 bxs.
Extracts
 Genoa, 50 brls.
 Fiume, 66
 New York, 15
 Philadelphia, 200 bxs.
Shumac
 Palermo, 2,910 bgs.
Valonia
 Smyrna, 3,405 kts. G. Essayan & Co.
 C'stantineople, 1,251 Jivan, Tekeian & Co.
Farina—
 Fiume, 160 bgs.
Glucose—
 Boston, 350 brls.
Glue—
 Boston, 3 brls. Richards & Ward
 Rotterdam, 268 bgs.
Lamp Black—
 New York, 10 cs.
Lithopone—
 Rotterdam, 60 cks.
Ochre—
 Antwerp, 14 bgs. J. T. Fletcher & Co.
Paint—
 Boston, 20 cks. Frazer & Co.
Paraffin Scale—
 Philadelphia, 100 brls.
 New York, 480 Thompson & Bedford
Phosphate—
 Aruba, 491 t. Isaac & Samuel
Pyrites—
 Huvela, 1,836 t. Matheson & Co.
Quebracho—
 Antwerp, 25 bgs. 1 ck.
Rosin—
 Wilmington, 5,026 brls.
 New York, 250
Salt—
 N. Orleans, 250 sks. T. J. Harman
Saltpetre—
 Calcutta, 803 bgs. Ralli Bros.
Silver Sulphide—
 Vera Cruz, 20 bxs. Elliott's Metal Co.
Soapstone—
 Bordeaux, 400 bgs. Geo. G. Blackwell, Sons & Co.
Starch—
 New York, 300 sks.
 Boston, 500 2,116 bgs.
 Hamburg, 100 pks.
 Antwerp, 66 cs. J. T. Fletcher & Co.
 Rotterdam, 40
Sulphur—
 Akassa, 34 cks. Royal Niger Co.
Tallow—
 New York, 28 brls. J. W. de Silva & Co.
 Philadelphia, 300 tcs. G. E. Chase
 New York, 398
 Boston, 400 56 brls. 6 hds.
 Campana, 230 cks.
 Zarate, 61 pps.
 Baltimore, 130 brls.
 Philadelphia, 120 tcs.
Tar
 Uleaborg, 1,710 brls.
Tartar
 Bordeaux, 1 ck.
Tartaric Acid—
 Rotterdam, 4 cks.
Ultramarine—
 Rotterdam, 40 cks.
Verdigris—
 Bordeaux, 1 ck.
Waste Salt—
 Hamburg, 210 t. 1,016 bgs.
 Rotterdam, 5 cks.
White Lead—
 Rotterdam, 51 cks.
Wolfram—
 Hamburg, 2 cs.
Wood Pulp—
 Boston, 186 brls.
 Gothenburg, 49 R. L. Lundgren
 " 10 pks. Tullis & Co.
 New York, 100 bds. Christie & Co.
 Rotterdam, 144 bls.

Zinc Oxide—
 Antwerp, 10 brls.
 Rotterdam, 20 cks. J. Mathews & Co.
Zinc White—
 Hamburg, 80 cks.

MANCHESTER.

Week ending August 28th.

Alizarine—
 Rotterdam, 59 cks.
Aluminium—
 New York, 134 bxs.
Ammonia—
 Rotterdam, 60 pks.
Aniline Salt—
 Rotterdam, 4 cks.
Arsenic—
 Melbourne, 50 cks.
Barytes—
 Rotterdam, 200 bgs.
Chemicals (otherwise unclassified)—
 Rotterdam, 17 cks.
 Antwerp, 5 brls. J. T. Fletcher & Co.
Colours—
 Rotterdam, 88 cks. 17 bxs.
 Boulogne, 2
 Ghent, 25 brls.
Cottonseed Oil—
 New York, 3 brls.
Cream of Tartar—
 Rotterdam, 20 kgs.
Extracts—
 Treport, 4 cks.
 New York, 6 brls.
Farina—
 Stettin, 500 bgs.
Glucose—
 Stettin, 153 cks.
 New York, 350 brls.
Glue—
 Rotterdam, 175 bgs.
 Boulogne, 3 cs.
Limestone—
 Antwerp, 1 crite. J. T. Fletcher & Co.
Paraffin Scale—
 New York, 400 brls.
Potassium Chloride—
 Hamburg, 40 cks.
Potassium Prussiate—
 Rotterdam, 4 brls.
Soap—
 New York, 5 brls.
Sodium Nitrate—
 Rotterdam, 4 cks.
Sodium Prussiate—
 Antwerp, 16 brls.
Starch—
 Rotterdam, 10 cs.
 New York, 3,386 sks.
Tartaric Acid—
 Rotterdam, 10 cks. 20 kgs.
Ultramarine—
 Rotterdam, 4 cks.
Waste Salt—
 Hamburg, qty.
White Lead—
 Rotterdam, 6 cks.
Wood Pulp—
 Sarpsborg, 4,357 bls.
 Montreal, 5,127 bls. W. Gallagher
 " 326 bls. Simpson & Howden
 Helsingfors, 12 Felber, Jucker, & Co.
 Kotka, 272 ps.
 Hamburg, 480 bds.
 Gefle, 8,500 bls.
Zinc Ashes—
 Antwerp, 15 brls.
Zinc Oxide—
 Rotterdam, 60 cks.
 Antwerp, 25 brls.
 New York, 100

HULL.

Week ending August 28th.

Acids—
 Bari, 20 cks. Wilson, Sons, & Co., Ld.
 Hamburg, 13

Albumen — Riga, 5 cs. Aniline Colours — Hamburg, 5 cs. Sissons Brs. & Co. Barytes — Rotterdam, 22 cs. W. & C. L. Ringrose " 40 A. Sanderson & Co. Antwerp, 162 Bailey & Co. " 103 bgs. Leetham, Ld. " 36 cs. H. F. Pudsey Bremen, 18 G. Holmes & Co. Hamburg, 8 Wilson Bremen, 190 bgs. Sissons Brs. & Co. Chemicals (otherwise undescribed) Rotterdam, 4 cs. W. & C. L. Ringrose Gothenburg, 1 cs. Wilson Dunkirk, 50 pks. Sons, & Co., Ld. Colours — Antwerp, 10 cs. Wilson " Sons, & Co., Ld. Rotterdam, 19 pks. " " Hamburg, 1 ck. " " Riga, 221 pks. 215 cs. " " Rotterdam, 19 cs. 2 W. & C. L. Ringrose " 16 pks. " " " 6 cs. Hutchinson & Son " 10 kgs. " " Cryolith — Amsterdam, 1 ck. Hutchinson & Son Dyestuffs — Argols Bordeaux, 25 bgs. Rawson & Robinson Indigo Rotterdam, 1 cs. J. Pyefinch & Co. Logwood Hamburg, 4,111 pbs. Wilson " Sons, & Co., Ld. Myrabolams Bombay, 998 bgs. Shumac Palermo, 540 bgs. Wilson " Sons, & Co., Ld. Shumac Extract Trieste, 11 brls. Wilson " Sons, & Co., Ld. Valonia Smyrna, 580 t. Farina — Stettin, 150 bgs. Wilson " Sons, & Co., Ld. Harlingen, 120 bls. Hutchinson & Son " 100 Wilson " Sons, & Co., Ld. Hamburg, 50 bgs. Glue — Bremen, 20 bgs. Veltmann & Co. Kaolin — Amsterdam, 20 cs. Hutchinson & Son Lithopone — Amsterdam, 20 cs. Hutchinson & Son Magnesite — Hamburg, 1 ck. Lofthouse & Saltmer Mercury — Hamburg, 1 cs. Minium — Rotterdam, 7 cs. Hutchinson & Son Nickel Salt — Rotterdam, 2 cs. Hutchinson & Son Phosphate — Bona, 1,500 t. Dunkirk, 1,500 bgs. Wilson " Sons, & Co., Ld.	Pitch — Amsterdam, 13 cs. W. & C. L. Ringrose Potash — Antwerp, 18 pks. Bailey & Leetham, Ld. " 40 dms. Wilson " Sons, & Co., Ld. Pumice Stone — Messina, 77 pks. Wilson " Sons, & Co., Ld. Soda — Antwerp, 370 bgs. Bailey & Leetham, Ld. " 148 pks. Wilson " Sons, & Co., Ld. Starch — Ghent, 356 cs. Wilson " Sons, & Co., Ld. Bremen, 714 Veltmann & Co. Antwerp, 20 Wilson " Sons, & Co., Ld. Ghent, 73 Hutchinson & Son Sulphur — Catania, 203 bgs. Wilson " Sons, & Co., Ld. " 534 pks. Tallow — Dunkirk, 104 cs. Wilson " Sons, & Co., Ld. Tartaric Acid — Rotterdam, 13 cs. Hutchinson & Son Tin Oxide — Amsterdam, 2 cs. Hutchinson & Son Turpentine — Bordeaux, 4 cs. Rawson & Robinson Ultramarine — Bremen, 4 cs. White Lead — Antwerp, 17 cs. Bailey & Leetham, Ld. " 93 Hutchinson & Son " 40 W. & C. L. Ringrose Wood Pulp — Ghent, 1 cs. Hutchinson & Son " 29 crts. " " " 1 pk. H. Briggs, Sons, & Co. Stockholm, 1 cs. H. Briggs, Sons, & Co. Zinc Oxide — Rotterdam, 20 cs. Hutchinson & Son Zinc White — Antwerp, 100 cs. Bailey & Leetham, Ld.	Dyestuffs — Alizarine Rotterdam, 4 cs. J. Rankine & Son Aniline Rotterdam, 1 cs. J. Rankine & Son Annatto Bordeaux, 2 cs. Argols Bordeaux, 51 bgs. Logwood Hayti, 500 t. McArthur, Scott & Co. Farina — Delfsryhl, 850 bgs. J. Rankine & Son Hamburg, 100 Gelatine — Hamburg, 5 cs. Magnesia — Hamburg, 1 ck. Paraffin Wax — Baltimore, 100 brls. Pitch — Archangel, 300 brls. Potash — Antwerp, 10 cs. J. Rankine & Son " 41 Hamburg, 57 80 dms. Rosin New York, 3,010 brls. Saltpetre — Hamburg, 4 cs. Sodium Sulphate — Antwerp, 18 cs. Tallow — New York, 50 tcs. Brisbane, 25 cs. Tar — Archangel, 1,814 brls. Tartar — Bordeaux, 10 cs. Tin Oxide — Rotterdam, 38 cs. J. Rankine & Son Treacle — New York, 500 brls. Varnish — Rotterdam, 2 cs. J. Rankine & Son Waste Salt — Hamburg, 1,270 bgs. White Lead — Rotterdam, 55 pks. J. Rankine & Son " 40 cs. Wood Pulp — Montreal, 2,691 bndls. Drontheim, 824 bls. Miramichi, 81,536 lbs. Christiania, 2,370 bls. Zinc Oxide — Rotterdam, 25 cs. J. Rankine & Son " 50 Hamburg, 100 brls. Zinc White — Rotterdam, 25 pks. J. Rankine & Son	Glucose — New York, 50 pks. Furness, Withy, & Co. Glue — Hamburg, 20 bgs. Tyne S. S. Co. Lead Ashes — Gothenburg, 2 cs. Manganese — Hamburg, 10 cs. Tyne S. S. Co. Ochre — Rouen, 168 cs. Saltpetre — Hamburg, 2 cs. Tyne S. S. Co. Soap — Rotterdam, 6 cs. Tyne S. S. Co. Starch — Rotterdam, 54 cs. Tyne S. S. Co. Tartaric Acid — Rotterdam, 6 cs. Tyne S. S. Co. Wood Pulp — New York, 240 rolls. Furness, Withy, & Co. Christiania, 150 bls. Zinc White — Rotterdam, 25 cs. Tyne S. S. Co.
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GOOLE.

Week ending August 25th.

Alizarine — Rotterdam, 64 cs. Aniline — Rotterdam, 203 cs. 56 cs. Barytes — Rotterdam, 13 cs. Chemicals (otherwise undescribed) Hamburg, 6 cs. Dyestuffs (otherwise undescribed) Boulogne, 32 cs. 1 cs. 93 pks. Infusorial Earth — Hamburg, 512 bgs. Lead Acetate — Hamburg, 3 cs. Nickel Sulphate — Hamburg, 1 ck. Ochre — Dunkirk, 82 cs. Plumbago — Boulogne, 1 ck. Potash — Rotterdam, 10 cs. Hamburg, 20 Dunkirk, 20 dms. Calais, 21 Potassium Permanganate — Hamburg, 5 cs. Saltpetre — Rotterdam, 100 bgs. Hamburg, 2 cs. Waste Salt — Hamburg, 170 t.
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GRIMSBY.

Week ending August 28th.

Albumen — Hamburg, 9 cs. Aniline — Hamburg, 5 pks. Antwerp, 75 Rotterdam, 5 cs. Caoutchouc — Hamburg, 1 ble. 3 cs. Antwerp, 6 Chemicals (otherwise undescribed) Hamburg, 1 pk. Dyestuffs (otherwise undescribed) Hamburg, 14 cs. Wolfram Ore — Hamburg, 10 cs.
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GLASGOW.

Week ending September 2nd.

Acetic Acid — Rotterdam, 2 cs. J. Rankine & Son Albumen — Hamburg, 10 cs. Alkali — Rotterdam, 20 cs. J. Rankine & Son Aniline Colours — Hamburg, 6 cs. 1 cs. Arachide Oil — Rotterdam, 30 cs. J. Rankine & Son Barium Chloride — Rotterdam, 6 cs. J. Rankine & Son Chrome Ore — Sydney, 6,417 bgs. Colours — Rotterdam, 2 cs. J. Rankine & Son Hamburg, 2

TYNE.

Week ending August 28th.

Alum Earth — Hamburg, 28 cs. Tyne S. S. Co. Barium Chlorate — Rotterdam, 350 bgs. Tyne S. S. Co. Barytes — Rotterdam, 68 cs. Tyne S. S. Co. Bleaching Powder — Rotterdam, 45 cs. Tyne S. S. Co. Colours — Ghent, 4 brls. Tyne S. S. Co. Rotterdam, 5 Hamburg, 3 cs.

EXPORTS OF CHEMICAL PRODUCTS

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending September 1st.

Alkali — Vamaru, 1 t. 19 c. £13	Ammonia (Liquid) — Perth, 20 cs. £60 Cologne, 28 dms. 135 Ammonium Carbonate — Paris, 1 t. 10 c. £42	Ammonium Chloride — Melbourne, 4 t. 17 c. £146 Trebizonde, 15 23 Cologne, 11 cs. 61	Salonica, 2 2 69 Odessa, 10 1 298 Varna, 10 15 Ghent, 17 54
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Ammonium Sulphate—

Dunkirk,	50 t.	£375
Treport,	202 13 c.	1,490
Hamburg,	300	2,260
Bremen,	150	1,140

Arsenic—

Amsterdam,	11 cks.	£54
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Bisulphite of Lime—

Durban,	1 t. 5 c.	£16
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Bleaching Powder—

Cape Town,	12 c.	£7
Pt. Elizabeth,	20 dms.	6

Borax—

Hiozo,	50 cs.	£51
Perth,	30 kgs.	32
Adelaide,	25	30

Carbonic Acid Gas—

Rotterdam,	5 flks.	£25
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Caustic Soda—

Durban,	1 t. 6 c.	£28
Fremantle,	9	17
Nelson,	1 6	17
Pt. Elizabeth,	6 7	125
Brisbane,	10	9
E. London,	1 5	24

Chemicals (otherwise undescribed)—

Karachi,	10 cs.	£64
Sydney,	10 cks.	14
Rosario,	20 2	35
B. Ayres,	6 pks.	44
Christiania,	13	23
Bombay,	2 { 20 kgs.	122
Antwerp,	2 { 10	65
Hiozo,	2 10	80
Calcutta,	3	44
Rangoon,	1 4	49
Cologne,	1	12
Perth,	26 pks.	27
Madras,	18	206
Hong Kong,	10 dms.	34
Bangkok,	4	13
Dusseldorf,	15 20 kgs.	118
Melbourne,	24 { 42 pks.	437
Dunkirk,	28	400
Cape Town,	21	13
Gothenburg,	2 kgs.	13
Hamburg,	36dms. 20	55
Amsterdam,	5	32
Brussels,	6	35

Citric Acid—

Sydney,	5 c.	£31
Melbourne,	1 kg.	6
Bombay,	10 2 cks.	83
Pt. Chalmers,	1	6
Antwerp,	5 c.	30
Dunedin,	1 cs. 1 ck.	14
Calcutta,	6	39
Christchurch,	3 c.	18
Rotterdam,	2 kgs.	14
Libau,	3	22
Brussels,	10	60
Genoa,	10	60
Bluff,	1	7

Coal Products—

Alizarine		
Boston,	30 cks.	£329
Aniline		
Calcutta,	1 cs.	£16
Brussels,	1 dm.	20
Aniline Dyes		
Valencia,	1 cs.	£9
Benzol		
Rotterdam,	175 cks.	£628
Carbolic Acid		
Pt. Elizabeth,	3 cs.	£9
Calcutta,	2	5
Hamburg,	20 tins	33
Montreal,	3 cks.	11
Rio de Janeiro,	1	7
Cresote		
Newport News,	500 cks.	£344
New York,	500	238
Naphtha		
Treport,	41 cks.	£165
Melbourne,	25 dms.	15
Naphthaline		
Paris,	300 bgs.	£189
Antwerp,	400	218
Cologne,	12 cks.	98
Hamburg,	6	51
Pitch		
St. John, N.B.,	271 cks.	£148
Rangoon,	22	14
Gothenburg,	100	70
Melbourne,	30 brls.	24
Boston,	1,000	516
Hochfeld,	180 t.	272

Tar

Trinidad,	2½ brls.	£12
Algon Bay,	200 dms.	33
Dunedin,	13	5
E. London,	100	5
Melbourne,	100 50 brls.	70
Beira,	50	7

Coal Products (otherwise undescribed)—

Brussels,	1 dm.	£9
Cape Town,	16 brls.	9

Copper Sulphate—

Ghent,	1 t.	£19
Wellington,	1	16
Odessa,	17 4 c.	275
Paris,	5 2	80
Christiania,	10	165
Brisbane,	1	17
Danzig,	22 10	371
Dunkirk,	5	81
Galatz,	8	6

Cream of Tartar—

Dunedin,	13 c.	£52
Pt. Chalmers,	2 t. 15	215
Auckland,	1 5	20
Townsville,	1	81
Fremantle,	10	39
Sydney,	3 5	230
Melbourne,	2	156

Disinfectants—

New York,	4 cs.	£15
Bombay,	80 dms.	21
Hamburg,	4	12
Durban,	100 cks. 550 dms.	1,191
Sydney,	6 8 cs.	57
Melbourne,	16 t. 4 c.	292
Cape Town,	45 kgs.	44
Hong Kong,	6 cs.	18
Fremantle,	14 pks.	21
Perth,	5	14

Hydrochloric Acid—

E. London,	20 cs.	£13
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Manure—

Lytelton,	200 t.	£800
Leghorn,	20	73
Durban,	20	65
Rouen,	20	120
Rocheport,	130	420
Amsterdam,	36	380
Memel,	600	1,280
Jersey,	157 1 c.	335
Treport,	40	300
Genoa,	120	535

Nitric Acid—

Jersey,	28 crbys.	£40
Madras,	19 c.	11

Oxygen Gas—

Amsterdam,	1 cs.	£35
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Phosphoric Acid—

Mauritius,	43 cks.	£171
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Phosphorus—

Rio de Janeiro,	2 cs.	£26
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Potash—

Melbourne,	28 t.	£52
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Potash Salts—

Auckland,	6 t. 13 c.	£220
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Potassium Chlorate—

Melbourne,	6 c.	£11
E. London,	25 kgs.	47
Cape Town,	30	51

Potassium Cyanide—

E. London,	20 t.	97
Pt. Elizabeth,	12	85
Melbourne,	1	6

Potassium Prussiate—

Genoa,	7 cks.	£103
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Saltpetre—

Dunedin,	6 c.	£6
Sydney,	1 t. 2	20
Wellington,	1	20
Newport News,	27 10	481
Ghent,	1 19	37
Lisbon,	3 13	69
Pt. Elizabeth,	4 16	111
Christchurch,	4 t. 16 c.	£115
Lytelton,	4 1	105
E. London,	8 19	414
Beira,	50 cs.	123
Falklands,	285 dms.	761
Launceston,	15	30
Durban,	100	135

Soda—

Auckland,	5 t.	£33
Melbourne,	5 c.	6
E. London,	1 5	25
Pt. Elizabeth,	8 14	19

Soda Crystals—

Gibraltar,	2 t. 10 c.	£7
Pt. Elizabeth,	4 9	14
Durban,	1	10

Sodium Bicarbonate—

Townsville,	2 t. 10 c.	£18
Pt. Elizabeth,	2 12	23
Genoa,	2	3
Beira,	1 5	20
Bombay,	2	24
Christchurch,	1	7

Sodium Carbonate—

Siberia,	2 t. 5 c.	£15
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Sodium Prussiate—

Hamburg,	2 cks.	£23
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Sodium Sulphate—

Ghent,	50 t.	£75
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Sulphur—

Antwerp,	10 t. 1 c.	£52
Adelaide,	30	178
Melbourne,	50	186
Wellington,	5	27
Rio de Janeiro,	10	5
Pt. Elizabeth,	130 kgs.	56

Sulphuric Acid—

E. London,	150 dms.	£56
Colombo,	15 cs.	19
Durban,	20	15
Cape Town,	40	27
Beira,	20	18

Tartaric Acid—

Adelaide,	10 c.	£55
Fremantle,	10	60
Calcutta,	2	14
Melbourne,	4 t. 2	470
Nelson,	3	19
Bombay,	1 ck.	14

LIVERPOOL.

Week ending September 1st.

Alum—

Havana,	7 t. 10 c.	2 q.	£20
Valparaiso,	3 12	1	17
Melbourne Bay,	2	2	11
Sydney,	1 5	6	
Halifax,	5 5	1	24
Kustendjie,	1 1	1	5
Sydney,	2 14	3	12
Galatz,	4 13	3	21
Constantinople,	6 4	3	28
M. Video,	10	76	
Montreal,	1 10	7	

Ammonia (Liquid)—

Rockhampton,	3 cs.	£7
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Ammonium Carbonate—

Ammonium carbonate —			
Ancona,	4 c.		£6
Genoa,	1 t. 8	2 q.	40
Naples,	11	1	6
Havana,	5		29
Melbourne,	5		7
Carril,		2	28
Odessa,	12		18
Bordeaux,	10	1	14
Callao,	5	1	4

Ammonium Chloride—

Smyrna,	8 c.	£13
Galatz,	19	27
Constantinople,	10	17
Melbourne,	1 t. 2	19

Ammonium Sulphate—

Ammonium Sulphate—			
Barcelona,	111 t.	2 c.	£930
La Pallice,	10		90
Oporto,	20		160
Cheribon,	17	19	740
Pecalugan,	15	5	2 q. 80
Valencia,	17	10	140

Antimony Sulphide—

Boston,	5 c. 3 q.	£45
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Bleaching Powder—

Baltimore,	216 cks.	
Bombay,	20 cs.	
Boston,	557	
B. Ayres,	48	
Calcutta,	130	
Genoa,	176	
Leghorn,	46	
Lisbon,	20	
Montreal,	88	
New York,	315 20 brls.	

Philadelphia, 189

Rouen,	166
San Sebastian,	57
Vigo,	6

Boracic Acid—

Rotterdam,	10 c.	£13
St. John's, N.B.,	2 brls.	6
Sydney,	1 t.	31

Borax—

Genoa,	4 t. 10 c.	£81
Rotterdam,	2 1	35
Dunedin,	1	10
Sydney,	4	64
B. Ayres,	1 2	18
St. John's, N.B.,	75 2 q.	13
Montreal,	12 10	213
New York,	10 cs.	28
Vera Cruz,	2 t. 10	4
Antwerp,	4 4	67
E. London,	3 10 3	68
Barcelona,	6 18 2	138
Hamburg,	1	16
Carril,	1	15
Ghent,	1 4	24

Carbolic Acid—

Rotterdam,	2 c.	£9
Colombo,	50 dms.	20
Hamburg,	11 t. 15 c.	835

Caustic—

Pt. Natal,	180 bxs.	
Rangoon,	30 bgs.	7 dms.
San Sebastian,	25 brls.	105
Seville,	25 brls.	150

Caustic Potash—

Baltimore,	4 t. 11 c.	£120
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Caustic Soda—

Bahia,	222 dms.	
Baltimore,	100	25 bxs.
Barcelona,	400	
Bari,	40	
Batavia,	20	
Bilbao,	175	29 brls.
Bombay,	50	
Boston,	100	
Carril,		5
Catania,	85	
Corunna,		20 cks.
Fairwater,	154	
Geffe,		26 brls.
Genoa,	346	
Hamburg,	230	40 bxs.
Hiozo,	190	
Leghorn,	24	
Liban,	238	
Manila,	100	
Marseilles,	125	
Melbourne,	95	
Messina,	75	
M. Video,	100	
Montreal,	141	
Naples,	85	
N. Orleans	190	
New York,	75	
Palermo,	35	
Para,	20	
Pernambuco,	20	
Philadelphia,	25	
Pt. Elizabeth,		20 bxs.
Pt. Natal,	20	45
Rio Grande,	56	
Rio de Janeiro,	10	
Rouen,	35	
St. Petersburg,	25	
Santander,	100	28 brls.
Santos,	20	
Seville,	124	
Stockholm,	50	
Stettin,	69	
Sydney,	60	
Tampico,	85	
Tarragona,	70	
Valencia,	50	
Valparaiso,	100	
Victoria, B.C.	15	
Wellington, N.Z.	14	
Yokohama,	250	

China Clay—

Baltimore,	100 cks.
Bombay,	330
Boston,	935 443 bgs.
Naples,	40 100
New York,	1992
Philadelphia,	300
Rio de Janeiro,	40 40 bgs.
Tacoma,	400
Vera Cruz,	100

Citric Acid—

Bombay,	2 c.	£13
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Coal Products—

Alizarine	
Piræus,	1 kg.
Aniline Oil	
Genoa,	4 dms.
Aniline Salts	
Barcelona,	10 cks.
Boston,	10 46 cs.
Genoa,	10
New York,	17
Philadelphia,	20 cks.
Syracuse,	2

Naphtha

Alexandria,	100 dms.
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Pitch

Antofagasta,	1 t. 17 c.
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B. Ayres,	10 dms.
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Galatz,	25 brls.
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Ibrail,	15
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Tar	
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Bathurst,	7 brls.
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Bordeaux,	250 cks.
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Galatz,	25
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St. John's, Nfld.,	70
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Tar Salts	
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Hamburg,	28 cks.
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Coal Products (otherwise undes.)—

Ibrail,	25 brls.
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Cobalt Oxide—

Gijon,	2 cs.	£62
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Copper Sulphate—

Brindisi,	14 t. 5 c.	£197
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Bari,	4	63
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Bourgas,	1	3 q. 16
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Copenhagen,	1	2 16
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Rio de Janeiro,	1	9 2 30
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New York,	15	224
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B. Ayres,	1	5 19
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Bombay,	5	77
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Galatz,	2 13 10	42
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Genoa,	19 10	280
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Vera Cruz,	200 cks.	724
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Bordeaux,	48	75
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Odessa,	2	15
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Hamburg,	6 17	106
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Antwerp,	10	1 4 158
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Piræus,	1 1 1	17
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Sydney,	1 10	24
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Melbourne,	2	32
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Rouen,	21 17	344
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Stettin,	18 3	14
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Copperas—

B. Ayres,	1 t. 9 c.	1 q. £3
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Talcahuano,	2 10	6
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Iron Oxide—

Gijon,	1 t. 14 c.	£10
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Lime—

Lagos,	21 t.	£23
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Magnesia—

Santander,	1 t. 7 c.	£21
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Genoa,	1 cs.	14
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Havre,	75	
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Magnesium Chloride—

Bangkok,	15 c.	£8
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Magnesium Sulphate—

Halifax,	20 brls.	
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Nitric Acid—

Rockhampton,	3 cs.	£7
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Oxalic Acid—

Barcelona,	14 c.	£23
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Paint—

Accra,	3 cs.	
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Alexandretta,	50 kgs.	
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Alexandria,	60	60 brls.
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Antwerp,		8 dms.
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Axim,	1	
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Bathurst,	19	
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Belize,	61	
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Beyroul,	45	
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B. Ayres,	19 cks 45	
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Calcutta,	10	50 and qty.
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Cartagena,	80 kgs.	
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Colon,	10	9 pks.
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Constantinople,	450	
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Curacao,	55	3 cks.
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Demerara,	15	10 brls.
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Hamburg,	3 cks.	
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Havre,	2	
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La Guayra,	5	
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Lisbon,	10 dms.
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Manila,	13
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Paits,	2
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St. John's, Nfld.,	6
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Sierra Leone,	381 kgs.
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Vera Cruz,	14 dms.
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Wellington,	7
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100 kgs.	
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Painters Colours—

Baltimore,	145 cks.
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Bombay,	2,895 kgs. 74 cs. 544 pks.
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Cape Town,	20
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Colon,	125
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Hamburg,	1 brl.
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Havana,	4
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Hong Kong,	9 tcs.
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Manaos,	17
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Manila,	17
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New York,	4
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Para,	202
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Ponce,	2 cs.
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Pt. Natal,	49 pks.
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Stettin,	50 kgs.
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Trieste,	200
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Paraffin Wax—

Barcelona,	10 bgs.
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Bari,	20
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Constantinople,	25
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Naples,	50
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Savannah,	12 cs.
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Phosphates—

Pt. Natal,	5 t.	£13
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Phosphorus—

Hiogo,	3 t. 15 c.	£885
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Shanghai,	14	140
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Picric Acid—

New York,	2 t.	£200
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Potash Salts—

N. Orleans,	12 t. 6 c. 1 q.	£894
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Potassium Bichromate—

Piræus,	10 c. 2 q.	£23
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Salonica,	7	16
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Potassium Carbonate—

Baltimore,	1 t. 7 c.	£27
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Potassium Chlorate—

Hamburg,	1 t.	£32
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New York,	2	58
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San Paulo,	1	10 c. 45
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Shanghai,	8	10 275
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Hamburg,	1	35
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Philadelphia,	3	5 97
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Konigsberg,	10	338
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Libau,	5	168
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Stockholm,	5	171
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New York,	19	10 581
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Potassium Cyanide—

New York,	2 t.	
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Potassium Prussiate—

Genoa,	3 t. 8 c. 3 q.	£171
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Salt—

Akassa,	596 t. 11 c.	
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Alexandria,	50	
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Amsterdam,	120	
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Antwerp,	308	13
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Assinee,		250 sks.
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Baltimore,	150	
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Bata,	11	5
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Boma,	25	
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Boston,	200	
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B. Ayres,	98	19
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Calcutta,	3,374	
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Cape Lahou,		500
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Cape Town,	250 bgs.	275
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Conakry,	348	40 cs.
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Dakar,		4 brls.
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E. London,		25
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Flensburg,	1,358	
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Futa,	700	
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Ghent,	50 t.	
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Gibraltar,		50 cs.
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Gothenburg,	200	
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Gd. Bassam,		303
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Lagos,		2,200
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Landana,	2,710 bgs.	
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Lahou,		250
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Loango,	2,000	
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Matadi,		24 brls.
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Melbourne,	440	550
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Memel,	470 t.	
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Montreal,	744	4,900
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Muculla,	500 bgs.	
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New York,	100 cs.	550
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Orebak,	145 t.	
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Para,	145	
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Pt. Antonio,		10 c.
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Quebec,	600	
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Rockhampton,	571	
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St. John's, N.B.,	1487	13
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Sandy Point,	15	
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Sassandra,	11	3
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Stockholm,	200	
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Sydney,	275	50 pks.
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Trinidad,	35	8
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Wellington, N.Z.,	125	2
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Salt Cake—

New York,	4 t. 10 c.	£74
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Delagoa Bay,	9 15	24
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Ghent,	125	161
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Saltpetre—

Para,	1 t. 14 c. 1 q.	£37
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Rio de Janeiro,	15	3 17
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Savannah,	4 brls.	8
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Boca,	1 2 c. 4	24
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Soap—

Abonnema,		200 cs.
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Accra,	50 bxs.	
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Addah,		
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Alexandria,	8 dms. 60	
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3 dms.	
3 cs.	
2	
2	
inople,	5
2	
1	
9 cks.	
4	
2	
400 kgs.	
80 dms.	
10 cks.	
loride—	
5 l.	3 c. 2 q. £69
CHESTER.	
ending September 1st.	
20 brls.	
um Chloride—	
4 cks.	
Colours—	
1 cs.	
Oil—	
10 tins	
Salts—	
8 cks.	
fs (otherwise undescribed)	
3 cs.	
rsburg,	2 bls.
am,	10 cks.
aneiro,	20 bgs.
a—	50 cks.
e—	12 cks.
am,	12 cks.
aneiro,	10 cks.
h—	12 cks.
fors,	12 cks.
Bisulphate—	
am,	2 cks.
ts—	
rg,	27 cks.
am,	20 dms.
arine—	
aneiro,	11 cs.
loride—	
am,	1 ck.

HULL.

ending August 28th.	
rg,	1 ck.
ium Sulphate—	
ux,	219 bgs.
dam,	50 cks.
ing Powder—	
46 cks.	
Soda—	
35 dms.	
ork,	142
2 cs.	
als (otherwise undescribed)	
dam,	50 cks. 30 pks.
3	
ux,	10 cs.
ania,	25
ntinople,	3 311 slbs.
agen,	25
16	
burg,	13
124	10 kgs.
ork,	1
dam,	70
ersburg,	15
8	34 bgs.
rg,	2
1	10 pks.
seed Oil—	
rdam,	921 c.
rp,	2,398
hagen,	318
rk,	201

Gothenburg,	109
Hamburg,	1,190
Harlingen,	200
Konigsberg,	30
Rotterdam,	316
Stockholm,	131
Stavanger,	51
Stettin,	300
Dyestuffs (otherwise undescribed)	
Abo,	4 kgs.
Constantinople,	1 cs.
Riga,	1
Stockholm,	5 cks.
Stettin,	1
Wasa,	1
Glue—	
Gothenburg,	10 bgs.
New York,	38 cks.
Guano	
Dunkirk,	210 t. 500 bgs.
Linseed Oil—	
Bergen,	21 c.
Christiania,	92
Christiansund,	34
Constantinople,	70
Copenhagen,	131
Hamburg,	245
Logwood—	
Stettin,	85 bgs.
Manure—	
Abo,	1,015 bgs.
Dunkirk,	922
Mineral White—	
Amsterdam,	50 bgs.
Paint—	
Antwerp,	1 cs.
Painters' Colours—	
Amsterdam,	6 cks.
Antwerp,	117 1 cs.
Abo,	155
Bremen,	26
Christiania,	1
Christiansand,	72
Copenhagen,	14
Dunkirk,	6
Danzig,	1
Ghent,	2
Gothenburg,	12
Hamburg,	9
New York,	40
Riga,	15
Rotterdam,	4
St. Petersburg,	5
Stockholm,	3
Stettin,	43
Wasa,	1
Paraffin Wax—	
Reval,	10 cks.
Pitch—	
Stettin,	10 t.
Soap—	
Christiania,	1 ck.
Stockholm,	3
Superphosphate—	
Copenhagen,	514 t.
Tallow—	
Gothenburg,	8 cks.
Hamburg,	29
Tar—	
Bremen,	10 cks.
Dunkirk,	55
Rotterdam,	6
St. Petersburg,	20 brls.
Treacle—	
Abo,	10 brls.
Wasa,	10 cks.
Varnish—	
Antwerp,	8 cks. 1 cs.
Gothenburg,	2
Reval,	8
Stettin,	7
Wasa,	6 brls.

GLASGOW.

Week ending September 2nd.

Ammonium Sulphate—	
Hamburg,	121 t. 13 c.
Asbestos—	
Calcutta,	£93
Bleaching Powder—	
Victoria,	£41
Coal Products—	
Alizarine Colours	£59
Lisbon,	£32
Alizarine Oil	£32
Lisbon,	£32
Creosote Oil	
Christiania,	£39

Naphtha	
Dunedin,	£26
Pitch	
Calcutta,	£90
U.S.A.,	48
Tar	
Calcutta,	£209
Christiania,	20
Coal Products (otherwise undes.)—	
Rotterdam,	£256
Dextrine—	
Melbourne,	1 t. 3 3/4 c.
Dyestuffs (otherwise undescribed)	
Lisbon,	£29
Dunedin,	91
Extracts—	
Lisbon,	£87
Australia,	130
New York,	165
N. Zealand,	131
Gelatine—	
Dunedin,	£20
Indigo—	
N. Zealand,	£31
Iodine—	
Rotterdam,	£110
Linseed Oil—	
Kingston,	5 l. 1 c.
Port of Spain,	1 3/4
Dunedin,	1 17
Manganese Oxide—	
New York,	£120
Paint—	
Hong Kong,	£74
Christiania,	108.
Adelaide,	£65
Calcutta,	309
Havana,	85
Painters' Colours—	
Hioho,	£32 108.
Amsterdam,	29 17
Rotterdam,	12
Auckland,	385
Barbadoes,	qty.
Canterbury,	118
Christchurch,	36 10
Dunedin,	220
Melbourne,	155
Oamaru,	"
Paraffin Wax—	
Lisbon,	£89
Stockholm,	52
Potassium Bichromate—	
Lisbon,	£137
N. Zealand,	£40 118.
Sheep Dip—	
Auckland,	£31
Dunedin,	370
Invercargill,	62
Napier,	34
Nelson,	144
Oamaru,	231
Pt. Lyttelton,	468
The Bluff,	750
Timaru,	62
Wanganci,	75
Soap—	
Canterbury,	15 c.
Grenville Bay,	1 t. 6 3/4
Sodium Bichromate—	
U.S.A.,	12 t. 15 1/2 c.
Starch—	
Lisbon,	£66
Tallow—	
Rotterdam,	11 t. 14 c.
Trinidad,	1 13
Treacle—	
Christiania,	1 t. 10 c.
Stockholm,	5 19
Turpentine—	
Singapore,	£26
White Lead—	
Delagoa Bay,	3 t. 9 c.
Natal,	£25

TYNE.

Week ending August 28th.

Alkali—	
Amsterdam,	18 t. 2 c.
Rotterdam,	3 6
Ammonium Carbonate—	
Halmstad,	1 t. 10 c.
Anthracene—	
Rotterdam,	36 t. 16 c.
Antimony—	
Copenhagen,	5 t.
Rotterdam,	2

Asbestos—	
Genoa,	1 c.
Barium Carbonate—	
Copenhagen,	2 l. 11 c.
Blanc Fixe—	
Genoa,	10 t. 3 c.
Bleaching Powder—	
Amsterdam,	22 t. 17 c.
Antwerp,	4 19
Hamburg,	39 3
Lisbon,	5
Rotterdam,	7 16
Ghent,	25 2
Aalborg,	3 8
Caustic Soda—	
Antwerp,	5 t. 2 c.
Hamburg,	10 3
Bordeaux,	2 18
Copenhagen,	8 15
Genoa,	30 16
Linseed Oil—	
Genoa,	3 c.
Litharge—	
Amsterdam,	5 c.
Lisbon,	2 l. 1
Magnesia—	
Hamburg,	13 c.
Lisbon,	5
Genoa,	8
Manure—	
Valencia,	165 t. 14 c.
Paint—	
Rotterdam,	12 c.
Trieste,	2 t. 6
Genoa,	7
Soda—	
Amsterdam,	11 t. 8 c.
Rotterdam,	30
Soda Ash—	
Helgenas,	15 t. 4 c.
Hamburg,	5 10
Sodium Peroxide—	
Leghorn,	35 cks.
Sodium Silicate—	
Leghorn,	10 t. 1 c.
Sodium Sulphate—	
Helgenas,	275 t.
Lisbon,	5 6 c.
Sulphate of Lime—	
Genoa,	2 t. 6 c.
Sulphur—	
Riga,	65 t.
Superphosphates—	
Valencia,	20 t.
Frederikshavn,	765
Turpentine—	
Genoa,	7 glns.
White Lead—	
Copenhagen,	4 t. 6 c.
Lisbon,	4 19
Riga,	1 10

GOOLE.

Week ending August 25th.

Alkali—	
Amsterdam,	2 cks.
Benzol—	
Rotterdam,	48 cks.
Chemicals (otherwise undescribed)	
Amsterdam,	40 cks.
Ghent,	3 4 cs.
Hamburg,	12
Coal Products (otherwise undes.)—	
Boulogne,	35 cks. 2 dms.
Ghent,	1
Rotterdam,	287 1 cs.
Manure—	
Antwerp,	214 bgs.
Potash—	
Antwerp,	8 dms.

GRIMSBY.

Week ending August 28th.

Caoutchouc—	
Malmo,	1 cs.
Coal Products (otherwise undes.)—	
Antwerp,	1 ck.
Hamburg,	26 3 dms.
Rotterdam,	2
Manure—	
Eshjerg,	4,500 bgs.
Naphtha—	
Dieppe,	40 brls.

PRICES CURRENT.

WEDNESDAY, SEPT. 8TH, 1897.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary

Acids:—

	£	s.	d.
Acetic, 25% and 40%	per cwt.	5/6	& 8/6
" Glacial	"		40/-
Arsenic S.G., 2000	"	1	4 0
Fluoric	per lb.	0	0 3 3/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0 10
" (Cylinder), 30° Tw.	"	0	3 0
Nitric 80° Tw.	per lb.	0	0 1 3/4
Nitrous	"	0	0 1 3/4
Oxalic	nett	0	0 3 1/2
Phosphoric, 1750°	"	0	0 11 1/2
Picric	"	0	0 11
Sulphuric (fuming 50%)	per ton	15	10 0
" (monohydrate)	"	5	10 0
" (Pyrites, 168°)	"	3	0 0
" " 150°	"	1	5 0
" (free from arsenic, 145°)	"	1	7 6
Sulphurous (solution) S.G. 1025	"	3	0 0
Tannic (pure)	per lb.	0	1 2 1/2
Tartaric	"	0	1 1 1/2
Arsenic, white powdered	nett per ton	22	0 0
Alum (loose lump)	"	4	10 0
Alumina Sulphate (pure)	"	4	2 6
Aluminoferic	"	2	3 6
Aluminium (Ingot metal 98/99 3/4 %	nett	148	0 0
Ammonia, Anhydrous	per lb.	0	1 3
" "880=28° B.	"	0	0 2 3/4
" " =24° B.	"	0	0 1 3/4
" Carbonate	nett	0	0 3
" Muriate	per ton	18	0 0
" " (sal-ammoniac) 1st & 2nd	per cwt.	33/-	& 31/-
" Nitrate	per ton	31	0 0
" Phosphate	per lb.	0	0 3 1/2
" Sulphate (grey) London	per ton	7	15 0
" " (grey) Hull	"	7	16 3
Aniline Oil (pure)	per lb.	0	0 7 1/2
Aniline Salt	"	0	0 7 1/4
Antimony	per ton	29	15 0
" (tartar emetic)	per lb.	0	0 9
" (golden sulphide)	"	0	0 10
Barium Chloride	per ton	6	10 0
" Carbonate (native)	"	3	10 0
" Sulphate (native levigated)	"	42/6	to 65/-
Bleaching Powder, 35 %	nett	6	5 0
" Liquor, 7 %	"	3	10 0
Bisulphide of Carbon	"	12	0 0
Chromium Acetate (crystal)	per lb.	0	0 6
Calcium Chloride	per ton	2	2 6
China Clay (at Runcorn) in bulk	"	15/-	to 30/-
Coal Tar Products and Dyes:—			
Alizarine (artificial) 20 %	nett per lb.	0	0 6 3/4
Magenta	"	0	3 9
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0	0 6
Benzol, 90's	per gallon	0	1 11
" 50/90	"	0	2 1
Carbolic Acid (crude 60°)	per gallon	0	1 10
" (crystallised 40°)	per lb.	0	0 7 1/2
" (liquid 95/97 %)	per gallon	0	1 0
Creosote (ordinary)	"	0	0 2 1/2
" (filtered for Lucigen light)	"	0	0 3
Crude Naphtha 30 % @ 120° C.	"	0	0 11
Grease Oils, 22° Tw.	per ton	2	15 0
Pitch, f.o.b. Liverpool or Garston	"	1	0 0
Solvent Naphtha, 90 % at 160°	per gallon	0	1 7
Copper	per ton	49	5 0
" Sulphate	"	16	5 0
" Oxide (copper scales)	"	44	10 0
Glycerine (crude)	"	30	0 0
" (distilled S.G. 1250°)	"	60	0 0
Iodine	nett, per oz.	0	0 7 1/2
Iron Sulphate (copperas)	per ton	1	10 0
" Sulphide (antimony slag)	"	2	0 0
Lead (sheet) for cash	"	15	15 0
" Litharge Flake (ex ship)	"	15	15 0
" Acetate (white)	"	22	0 0
" " brown	"	15	0 0
" Carbonate (white lead) pure	"	16	15 0
" Nitrate	"	19	0 0

Lime, Acetate (brown) (ex ship)	per ton	5	2 6
" " (grey) (ex ship)	"	8	0 0
Magnesium (ribbon and wire)	per oz.	0	2 3
" Chloride (ex ship)	per ton	2	10 0
" Carbonate	per cwt.	1	17 6
" Calcined Magnesia	per ton	8	0 0
" Sulphate (Epsom Salts)	per ton	2	15 0
Manganese, Sulphate	"	16	0 0
" Borate	per cwt.	2	10 0
" Ore, 70 %	per ton	3	10 0
Methylated Spirit, 61° O.P.	per gallon	0	1 8
Naphtha (Wood), Solvent	"	0	2 4
" " Miscible, 60° O.P.	"	0	4 4
Oils:—			
Cotton-seed	per ton	16	15 0
Linseed	"	17	15 0
Stearine	per ton	22	0 0
Phosphorus (yellow)	per lb.	0	2 0
" (red)	"	0	2 0
Potassium (metal)	per oz.	0	3 0
" Bichromate	nett per lb.	0	0 0
" Carbonate, 90% (ex ship)	per ton	16	10 0
" Chlorate	per lb.	0	0 0
" Cyanide, 98%	"	0	0 10
" Hydrate (Caustic Potash) 90%	per ton	23	15 0
" " (Caustic Potash) 75/80%	"	20	0 0
" " (Caustic Potash) 70/75%	"	19	10 0
" Nitrate (refined)	per cwt.	1	1 6
" Permanganate	per cwt.	3	15 0
" Prussiate Yellow	per lb.	0	0 5
" Sulphate, 90 % (ex ship)	per ton	9	15 0
" Muriate, 80 % (do.)	"	8	10 0
Silver (metal)	per oz.	0	2 1
Sodium (metal)	per lb.	0	2 1
" Carb. (refined Soda-ash) 48 %	nett per ton	4	15 0
" " (Caustic Soda-ash) 48 %	"	4	5 0
" " (Carb. Soda-ash) 48%	"	4	0 0
" " (Alkali) 58 %	"	3	17 0
" " (Soda Crystals)	f.o.b. w'ts.	2	5 0
" Acetate (ex-ship)	"	12	0 0
" Arseniate, 45 %	"	14	7 6
" Chlorate	per lb.	0	0 4 1/4
" Borate (Borax)	net, per ton	14	15 0
" Bichromate	per lb.	0	0 3 1/4
" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	"	8	15 0
" " (74 % Caustic Soda)	"	8	15 0
" " (70 % Caustic Soda)	"	7	15 0
" " (60 % Caustic Soda)	"	6	15 0
" " (pure liquor 90° Tw.)	"	3	15 0
" " 77/78 % powdered (99 % hydrate)	"	12	10 0
" Bicarbonate	"	6	10 0
" Hyposulphite	"	5	0 0
" Manganate, 25%	"	15	0 0
" Nitrate (95 %) ex-ship Liverpool	per cwt.	0	7 0
" Nitrite, 98 %	per ton	27	10 0
" Phosphate	"	10	10 0
" Silicate (glass)	per ton	4	10 0
" " (liquid, 100° Tw.)	"	3	7 0
" Stannate, 40 %	per cwt.	3	2 0
" Sulphate (Salt-cake)	per ton	0	19 0
" " (Glauber's Salts)	"	1	7 0
" Sulphide	"	6	15 0
" Sulphite	"	5	0 0
Strontium Hydrate, 100%	"	10	15 0
Sulphocyanide Ammonium, 95 %	per lb.	0	0 0
" Barium, 95 %	"	0	0 0
" Potassium	"	0	0 0
Sulphur (Flowers)	per ton	7	10 0
" (Roll Brimstone)	"	6	10 0
" Brimstone: Best Quality	"	4	12 0
Superphosphate of Lime (26%)	"	2	5 0
Tallow	"	19	0 0
Tin Crystals	per lb.	0	0 0
" English Ingots	per ton	65	0 0
Zinc (Spelter)	"	17	10 0
" Chloride (solution, 100° Tw.)	"	4	17 0
" Sulphate, Crystal	"	5	2 6

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Vol. XXI.

Contents.

PAGE	PAGE
Capitals	177
ester Sewage Problem ..	178
List	179
Latest Complete Speci-	179
.....	179
Alkali and Bleach	179
ence	180
ed Mixer	180
Petroleum from U.S.A. ..	180
Exports for August	181
in the Rand	181
Law	181
y Value of a Bacterio-	182
amination of Water ..	182
Trade Notes	184
Tar and Ammonia Products ..	184
Miscellaneous Chemical Market ..	184
Report on Manure Material	185
The Metal Markets	185
Liverpool Oil and Colour Market ..	185
Hull Paint, Oil, and Colour Report ..	185
West of Scotland Chemicals	185
Tyne Chemical Report	185
New Companies	186
Imports	186
Exports	189
Prices Current	197

Notices.

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Communications for the Editor, if intended for insertion in the next issue, should reach the office not later than Tuesday.

Reports, and correspondence on all matters of interest to the chemical and allied industries, home and foreign, are solicited. Contributors should condense their matter as much as possible, and give only the side only of the paper, and in all cases give their names and addresses, not necessarily for publication. Sketches should be on separate sheets.

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Advertisements intended for insertion in the current week's issue should reach the office by Thursday morning at the latest.

THE TWO CAPITALS.

FOR many weeks past now a fight to the death has been going on between two parties, the one represented by Capital in the sense that acts on the average leader of the people like a toreador on a bull, and the other by a capital "L," a very big capital that stands for Labour. In the present case the labour is not of the common order, but is the skilled labour of the engineering trade. The capital is the same old socialist's whipping post that has so often withstood, and very often profited by, the onslaughts against its existence.

It is stated that the present fight will be a death blow to trade unionism if the strikers, and those who have been locked out in consequence, have to give in first. Such a conclusion would certainly not be encouraging, but we do not attach such superlative importance to this particular dispute as regards the future of trade unionism. There has long been a canker worm eating into the vitals of this movement which is bound sooner or later to prove fatal.

As a matter of fact we should be very sorry to see the desire to combine for the establishment of individual rights become extinct among the money earning classes. Trade unionism in principle and reasonable practice is an excellent thing, but unfortunately those who seek to benefit a comparatively ignorant class do not inculcate the principles of honesty, honour, or judiciousness. On the other hand they often do not scruple to work upon the feelings of their supporters by the most sordid of motives and tyrannical methods of putting the same into effect. Put a beggar on a horse and no one needs telling where he will ride to, yet almost without exception the would-be leaders of the people persist in ignoring the fact recorded in this familiar old proverb. The evil that has been eating into the heart of trade unionism has arisen from a forgetfulness of the fact that if the dominating sway of capital is so heinous and baneful that it ought not to be allowed to exist, the assumption of an equally tyrannical position by trade unionists can never remedy matters, for two blacks never yet made a white, and what is more such an assumption of the dictatorship in the affairs of trade is, if anything, more baneful to the public welfare than the burden imposed by the capitalists.

The majority of trade unionists are simply actuated by the spirit of gambling. They have a vague idea that by striking often enough at the instigation of leaders whose wisdom they cannot gauge and whose policy they cannot comprehend, they will ultimately gain something for nothing. They therefore blindly and unreasonably accept as logical truths, things that otherwise their own commonsense, however limited, would tell them were fallacious and often superficially idiotic. Yet when such inanities are rammed down their throats they applaud the men who are hoaxing them, often, we fear, with a knowledge that they are uttering words they cannot substantiate and never wish to.

Now it is to be hoped that whichever way the present struggle ends it will bring home to the majority the fact that they will never materially benefit themselves or others by acting on advice that they know entails the enforcement of impractical demands. Above all, let the guiding principle be honesty in the premises of argument and their practical application.

Stripped of the gambling element we cannot conceive it possible that the "backbone of England," as the operative classes are so frequently termed by their flattering leaders, are so devoid of discernment as to fail to detect that these labourers for their welfare are only human—sometimes very human—after all. *Their* actuating principle is self, only in a taking guise. They have the same love of enjoyment as the bloated capitalist.

Let it be well laid to heart that at the recent Trade Unions Conference in Birmingham, when much business remained to be done, a motion was submitted that the Congress should adjourn at that hour in order to take advantage of Mr. Alderman Cook's invitation to a reception and entertainment at the Botanical Gardens, Edgbaston. A somewhat disorderly scene followed, members endeavouring in vain to get a hearing in opposition to the motion. On a show of hands being taken the motion was carried by a large majority. The afternoon was accordingly devoted to the garden party.

Compare this fact with the remarks of labour organs on the movement of a motion to adjourn the House of Commons for Derby Day, and it will be evident that the cat does not always jump the same way. What had these champions of the grand cause of labour to do with garden parties, things which only the idle devotees of fashion and the much-blamed aristocracy waste time upon, to the neglect of the affairs of the Nation?

Just as their actions are incompatible, so to even a greater extent are their suggestions and arguments fatuous. When as in comic opera an old gentleman chanced to yawn in the middle of the rambling discourse of a Socialist leader, and he tried to excuse himself on the ground that he was only taking in the air, he was promptly harangued: "How dare he take in the air, the air belonged to the people, and he had no right to take any of it." Yet this declaration did not merit the laughter it raised one whit more than many other arguments used by those who are to lead Labour to Light and Liberty.

Lastly, let those who complain so much about the frying-pan, without giving a thought to the heat of the fire, make an indelible note of the following on the tablets of their memory:—Mr. John Burns's new motto is "that trade follows agitation." How does this agree with the following extract from the letter of a very large steamship company on the Continent, addressed to a leading shipbuilding firm on the Tyne?—"The continual strikes in the shipbuilding trade of your country will have the effect of driving foreign owners away from your yards. We contemplate building another steamer, but shall not even invite tenders from British shipbuilders. We do not care to leave the delivery of such boats to the mercy of British trade-unions." At the same time bear in mind that whether trade follows after agitation or not, poverty and distress often attend the "backbone of the country;" yet it brings an easy time and a comfortable and perpetual salary to the noble self-abnegating leaders who have led them to the land of starvation and destitution.

THE SAN JORGE NITRATE COMPANY have declared an interim *dividend* of 2s. 6d. per share for the past half-year.

THE MANCHESTER SEWAGE PROBLEM.

THE CORPORATION AND THE JOINT COMMITTEE.

At the County Police Court last week, before the stipendiary, Mr. J. M. Yates, Q.C., and other justices, Mr. Rhodes, barrister, applied on behalf of the Manchester Corporation for an extension of time to construct the necessary work in regard to an order made by the court on September 16th last year to the effect that "within twelve months they should prevent liquid sewage from falling, flowing, and being carried into the River Mersey and Manchester Ship Canal." Mr. Rhodes stated that the Corporation were about to seek powers in the next Parliament to promote a Bill in order to take the effluent resulting from the chemical treatment and precipitation of the sewage at Davyhulme into the River Mersey by means of a conduit and other works near Walton Lock. The Mersey and Irwell Joint Rivers Committee would agree to an extension for a certain time, but not for a long time, and the Corporation consented to that. The Council were summoned for the 15th September to decide upon that matter, and the borough fund ratepayers' meeting was also summoned for the 24th September, so that the Corporation would be taking all the necessary steps relative to proceeding with the promotion of that Bill. Under those circumstances, and seeing the great difficulties that surrounded the Corporation in dealing with the sewage, he asked that they would grant the extension. Mr. Wilson, deputy clerk to the Joint Committee, said he had been instructed by the Joint Committee to consent to a reasonable extension of time, and the Committee suggested that the extension should be for three months. That had practically been acceded to by the Town Clerk of Manchester, and was to date from the 9th of August. The Town Clerk informed him that three months from that date would fall upon the day of the election of the new Lord Mayor, and suggested that it should be until November 19, and the committee consented to that. Before the Bench made the order, however, he would like to point out that when Mr. Rhodes appeared on September 16th last year, he stated that the Corporation were going to proceed with a similar scheme, and the Joint Committee, without expressing any opinion as to the merits of that scheme, consented to it. That matter, so far as the Joint Committee were concerned, was in abeyance until the Sub-Committee meeting in August, and at that meeting he submitted a letter he had received from the Town Clerk pointing out the difficulties experienced by the Corporation in dealing with the sewage, and asking for an extension of six months. The resolution passed by that committee was to the effect that the clerk should write to the Corporation and inform them that until they adopted some different scheme to ensure the efficient treatment of the whole of the sewage, the Committee could not consent to an extension of the order of the court. There was really no definite scheme made out yet, and no details or plans had as yet been got out, or at least he had no information upon the subject, and that was the reason why the Joint Committee felt that a six months' extension would be longer than they could reasonably consent to. The committee recognised that if those plans were not deposited and all notices had not been given in time, it would mean another twelve months before the Manchester Corporation had a definite scheme to put before the court. There was another matter which he ought to call the attention of the court to, and that was that the effluent from the Davyhulme works had unfortunately become considerably worse during the last twelve months. Samples of the effluent had been taken and analysed by Sir Henry Roscoe, and a copy of that analysis forwarded to the Corporation, and not a single one had been disputed. It had been said, and the question had been raised time after time in the City Council and elsewhere, that that particular analysis of Sir Henry Roscoe was not a reliable one so far as the Manchester effluent went, because of the large amount of chemicals it contained, but he had a gentleman in court who would say that other methods of analysing had been adopted and proved that the effluent contained high polluting matter.—Mr. Rhodes said that in reference to the remarks of Mr. Wilson regarding the Manchester effluent as to its being somewhat worse, he wished to point out that the City Surveyor reported that the character of the sewage during the last twelve months had altered very materially on account of the new districts that had been coupled with the city, namely, the district of Clayton, where all the chemical works were, and that had added to the difficulties Manchester had with its sewage.—The Bench made an order for an extension until the end of next November.

THE REASON WHY.—Mr. Commissioner Kerr, the shrewd judge of the city of London Court, has explained how it is that "lawyers are kept going." They would starve, he says, if people promptly made a note of the things about which there is likely to be a dispute. As it is they grow fat, for the simple reason that people, instead of keeping memoranda, go on chattering, and the more they chatter the further they get from the facts. The consequence is an appeal to the courts of law, contradictory evidence, and excellent fun for the lawyers. A most wise judge, Mr. Commissioner Kerr, one who plucks out the heart of a mystery with a master hand.

The Patent List.

This list is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of E. Davis and Alfred R. Davis, who report professionally the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Process for Extracting Liquid from Sewage Sludge. C. J. Lomax. 6. August 30.
 Iron and its Alloys. E. van Toll. 19,922. August 30.
 Grinding and Pulverising Machines. M. F. Williams. 19,993. August 31.
 Apparatus for Disintegrators. W. Luckley. 20,001. August 31.
 Process and Compound for Treating Lighting Oils. J. McKee. 20,032. September 1.
 Hides, etc. J. Massop, jun., and E. B. Garland. 20,125. September 1.
 Apparatus. H. Sefton-Jones, of W. P. Thompson and Co. 20,134. September 1.
 Apparatus for Heating and Illuminating Gas and Bye-products. W. Per. 20,184. September 2.
 Apparatus. J. Weichmann. 20,218. September 2.
 Process for Crude Commercial Gutta-percha. W. Ramsay. 20,303. September 3.
 Process for Zinc Bearing Ores. S. O. Cowper-Coles and G. B. Pearce. 20,319. September 3.
 Process for Town's Refuse. G. O. Marlow. 20,343. September 4.
 Process for Making Vinegar. A. Haax. 20,346. September 4.
 Evaporating Apparatus. H. J. Damuth, E. N. Perkins, and J. T. 20,349. September 4.
 Process for Skins, etc. E. J. Thibaut. 20,354. September 4.

ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

These abstracts are specially prepared for the Chemical Trade Journal. All RIGHTS of publication are RESERVED. This is the earliest of abstracts of Chemical and allied patents accessible to the

elements in the Construction of Filters and Tanks for Precipitation and Filtration Purposes, and in the Appliances and Fittings adapted for Use in the same. H. L. Hinnell, 41, Corporation-street, Manchester. Eng. Pat. 22,503. October 10, 1897.

Tanks are arranged with distributing troughs and weir walls, to be attached weir plates. The distributing troughs are situated at the top of the tanks so as to ensure uniform distribution over the bottom of the tank at once. The weir walls are situated at even distances, and tend to cause the rapid settlement of the suspended matter, while the flocculent portions are caught by the weir plates, or in traps. The actual straining filter traps are composed of having a division plate, the lower half of which is perforated, and is filled with a filtering medium and the other is left empty, and passing through the filtering material into the open trough. The traps are movable so that they can be removed for cleansing and of the filtering medium. There are two drawings.

Improved Furnace for the Production of Calcium Carbide. R. L. Ham, 13 Buckingham-street, Strand, London, W.C. (communicated by H. Berg, A. Serret, and F. Anigo, all of Luero). Eng. Pat. 17,393. July 10, 1897.

Acetylene is introduced into the fuel burning chambers of furnaces, thus engendering a very high temperature, enables the carbide to be formed. The particular form of furnace is not of importance, but the crucible pattern is described and illustrated. The crucible is filled with coke, into which acetylene is injected through a tuyere. The bottom of the crucible is provided with ducts for the removal of the gas as it forms.

Process for Obtaining Tartaric Acid and Tartrates. A. Schmitz, Dusseldorf, and E. C. W. Toenges, of the same place. Eng. Pat. 21,178. September 8, 1896.

Crude products, such as wine lees, crude tartars, or the by-products from wine cultivation or the manufacture of grape oil, are introduced into a boiling solution of carbonate of soda, the solution being so regulated as to leave the liquid slightly alkaline. The liquid is filtered off, the residue washed, and the washings added to the filtrate.

To the weak alkaline dark-brown fluid so obtained sodium carbonate is added in sufficient quantity to change the liquid to light yellow, this change being accelerated by gentle heat if necessary. The liquid is then exactly neutralised with muriatic or acetic acid and calcium chloride added, when white tartrate of calcium is precipitated. The pure tartaric acid the process of boiling with sodium carbonate, is repeated, and the pure calcium tartrate is converted into tartaric acid by treatment with a mineral acid in the usual way. The cream of tartar the deposit obtained from the perfectly clear solution by the addition of calcium chloride is boiled under

pressure in excess of potassium carbonate. The precipitated carbonate of lime is filtered off, the solution treated with a small amount of hypochlorite, and the cream of tartar is thrown down with muriatic acid or vitriol.

Improvements in the Manufacture of Zinc White. H. H. Lake, 45, Southampton-buildings (communicated by G. Harmegnies, of Brussels). Eng. Pat. 23,716. October 24, 1896.

Zinc residues, known as "ragpicker's zinc," are dissolved in hydrochloric acid. If there is more than 0.5% of iron present it has to be removed with zinc oxide. After filtering, the amount of hydrochloric acid present, either free or combined, is determined with silver nitrate and 54 parts of magnesium oxide added to every 100 of hydrochloric so present, the liquid being first heated to boiling point. The precipitated zinc oxide is washed and dried in a centrifugal. The zinc white is then finally dried at 120°C. The mother liquor and waste waters containing chloride of magnesium are concentrated in a multiple evaporator to a gravity of 1.4, and are then decomposed at 250°C., and the hydrochloric acid and magnesia used over again.

DIKA FAT.

DIKA fat is an actual vegetable fat, rather extensively used by the natives of the Cameroons district for culinary purposes. It is manufactured from the fruit of the wild native mango. The mango is dried and afterwards boiled, when the oil is extracted. It is somewhat darker in colour than palm oil, though of the consistency of that well-known produce. Plantains cooked with dika fat are described as delicious, and indeed the flavour of the fat is most agreeable in the various ways in which it is used in the kitchen. Merchants have endeavoured to introduce it into this country, but failed to obtain a market for the article. It is therefore not an article that can be obtained here, as it cannot be produced and imported at a paying rate. Oils and fats are obtainable in great abundance in Western Africa, a great number of fruits, nuts, and other vegetable produce supplying what is most useful. Another fat of a very curious character is "Beetle oil," which is as like as possible, both in colour and consistency, to congealed cocoa-nut oil. As its name implies, the fat is extracted from a species of beetle, but, as might be expected, it cannot be produced in sufficient quantities at the price it would command in this country to pay, so that our readers need not fear being served with "beetle" butter, which, however palatable, would by association ruin its prospect in British markets. The natives speak of dika fat as odika fat, though in the published proceedings of the Kew Gardens the authorities, in a very brief reference some time since, called it dika fat, but did not describe it in any way.

EXPORTS OF ALKALI AND BLEACH.

THE following returns, which are taken from the official foreign and colonial statistics of the United Kingdom, give the amount and value of alkali and bleaching materials shipped to the undermentioned countries for the month of July, 1897, as compared with the same month of 1896:—

ALKALI.

Port.	1896.	1897.	1896.	1897.
	Cwts.	Cwts.	£	£
Russia	18,104	26,339	5,408	6,634
Sweden and Norway	10,974	7,867	2,378	1,848
Germany	8,734	15,758	2,901	3,806
Holland	8,028	6,351	1,934	1,316
France	4,284	6,182	1,466	2,068
Spain and Canaries	27,796	25,750	9,634	7,934
Italy	16,076	19,495	5,027	5,924
United States	136,852	93,930	32,636	25,535
Australasia	18,208	35,016	6,119	10,105
British North America ..	20,466	8,411	4,262	2,289
Other countries	82,231	126,892	23,947	37,050
Total	351,753	371,991	95,712	104,509

BLEACHING POWDER, ETC.

Port.	1896.	1897.	1896.	1897.
	Cwts.	Cwts.	£	£
United States	52,342	48,579	17,382	16,114
Other countries	34,302	32,889	11,503	10,899
Total	86,644	81,468	28,885	27,013

Correspondence.

*. *We do not hold ourselves responsible for the opinions expressed by our correspondents.

DRYING SEAWEED.

(To the Editor of the Chemical Trade Journal.)

SIR,—Can you, or any of the many readers of your *Journal*, inform me what dried seaweed is used for? Also, to what extent should it be dried, and about what price it is sold at?—Yours, etc.,

TOM GOODING.

INCOME TAX ASSESSMENTS.

(To the Editor of the Chemical Trade Journal.)

SIR,—As your readers are now receiving their notices of assessment for the year 1897-8 will you permit me to remind them that if the amount at which they are assessed exceeds the average of their profits for the three years ending 5th April, 1897, or such date as they usually make up their accounts, they should immediately give notice of appeal to the Surveyor of Taxes for their district, and have the assessment amended accordingly. Moreover, if they find that through loss or decreased profits or deductions of the allowances for depreciation or value of premises, that the profits of the three years named show a less average profit than the amount upon which they paid income tax for 1896-7, they should give notice of appeal in respect of that year also, and obtain repayment of the amount of tax overpaid. Further, if any person or firm sustains a loss in any trade, manufacture, adventure or profession, or in the occupation of land for the purposes of husbandry only, during last year, they can, on giving notice, have the said loss set against income from other sources, and have so much of the duty paid on or deducted from such income refunded as would represent the tax upon income equal to the amount of the loss. No time should be lost in lodging business appeals, as even now in a few districts it is too late for repayment claims.

Depreciation.—As the law now stands, deductions are allowed both in respect of expenditure incurred in repairs or alterations of machinery according to the average of the three years preceding the year of assessment and also in respect of the diminished value of machinery by reason of wear and tear during the year. In addition, the Board of Inland Revenue have now issued an instruction that "where a claim is made in respect of the introduction of modern machinery in a factory, no objection is to be taken to the allowance, as a deduction from the assessable profits of the year, of so much of the cost of replacement as is represented by the existing value of the machinery replaced. Any excess in the cost of the new machinery over the actual present value of the old is an addition to the capital of the business, and cannot properly be regarded as a charge upon revenue for the purposes of income tax assessment."

With few exceptions, all persons whose incomes did not exceed £160. per annum for the three years ending the 5th April, 1897, can still claim repayment of tax deducted from dividends, rent, royalties, or interest in respect of such years, even when the dividends are said to be "free of income tax," while those whose incomes do not exceed £500 are entitled to abatements which are well worth claiming, as the repayment may amount to £16, to say nothing of the refund that can be obtained in respect of life insurance premiums on own and wife's life. No repayment is allowed for premiums on life insurance effected with a foreign company. The American companies, however, to put themselves on a par with the British offices, refund the duty on the amount of the premiums when claimed.

As royalties are not allowed as a deduction in arriving at the profits of a concern, the tax thereon should be deducted from the person to whom the payment is made; on the other hand, the royalty holder ought not to include the amount received in his return for assessment.

I am at all times happy to advise your readers whether they can establish a claim, on their sending me full particulars of their income, and a stamped addressed envelope for reply.—Yours, etc.,

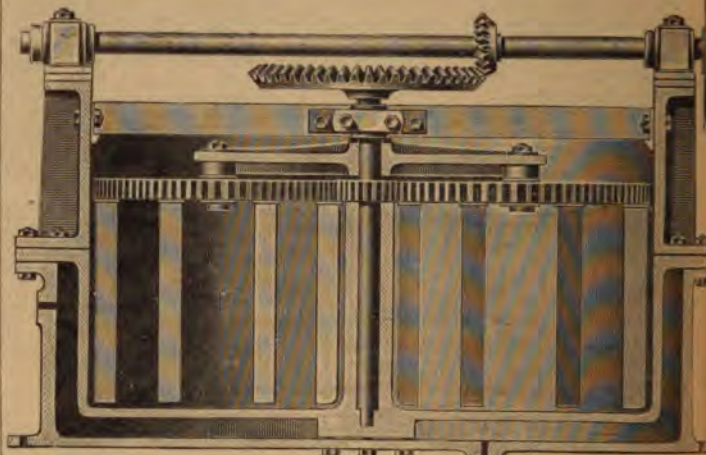
JOSEPH AFFLECK, JUN.

72, Market-street, Manchester.

BAD OIL AND CHEAP LAMPS.—The question of cheap German lamps came before a coroner's jury at Hammersmith on Thursday, last week, while they were investigating the circumstances of the death of a woman who had been burned by the upsetting of a German tin lamp that had cost 5½d., and the oil for which is sold at ¾d a pint. Mr. Ross, County Council inspector, stated that 40 lives had been lost during the year ending March, 1897, through the use of cheap glass and metal lamps with oil of a low flash point. The Coroner observed that it was sad to think that the woman's death was caused by American oil burned in a German lamp. A verdict of accidental death was returned.

AN ENAMELLED MIXER.

THIS mixing pan possesses all the advantages of the now well-known steam-jacketted "Planetary" mixers, with the additional feature of being enamelled throughout. We have explained the operation of the sun and planet motion of the mixing blades in the earlier numbers of the *Journal*, but there are one or two special points in this enamelled pan that call for notice. Not only is the pan enamelled, but the blades are protected in the same way. Then the central shaft bearings are different. It will be seen from the illustration that this shaft is cast solid on the inside pan, and completely encloses the spindle and bearings, so that they are absolutely protected from contact with the contents of the pan.



For many purposes in the chemical trade, as well as in the saccharine industries, these pans will be found of great assistance to the manufacturer.

The stirring blades are movable, and can be taken out after the mixing operation for the purpose of emptying or cleansing.

Slots are provided in the disc-wheels, so that the blades can be shipped or unshipped at pleasure. A simple device is fitted over the heads of the blades for fixing them in position.

This pan is stocked in two sizes of 35 and 50 gallons capacity.

EXPORTS OF PETROLEUM FROM U.S.A.

THE Chief of the Bureau of Statistics, Washington, gives the following returns of the exports of petroleum and petroleum products for July, 1897. The total shipments were 89,083,369 gallons, compared with 83,296,885 gallons in 1896. The total for the seven months ending July 31st, 1897, was 550,809,642 gallons, against 512,884,159 gallons during the same period in 1896. The details of the shipments are as follow:—

	CRUDE PETROLEUM.	Gallons.
Total, July, 1897	.....	9,928,556
" " 1896	.....	13,869,485
	NAPHTHAS.	
Total, July, 1897	.....	317,391
" " 1896	.....	1,094,214
	ILLUMINATING.	
Total, July, 1897	.....	71,902,341
" " 1896	.....	64,452,884
	LUBRICATING AND PARAFFIN.	
Total, July, 1897	.....	4,042,057
" " 1896	.....	3,879,064
	RESIDUUM.	
Total, July, 1897	.....	2,893,044
" " 1896	.....	1,638

FIN DE SEICLE WARFARE.—A Russian chemist has discovered a most powerful anæsthetic. It is several thousand times more powerful than chloroform, volatilises most readily, and acts when freely mixed with air at great distances. Experiments are being made at St. Petersburg to see if it cannot be enclosed in bombs, which would have the extraordinary effect of anæsthetising instead of wounding the enemy.

PORTS AND EXPORTS FOR AUGUST.

Board of Trade returns for the past month are much more satisfactory. In the *imports*, chemicals and oils are lower in value, but wood pulp has increased. In the *exports*, alkali, bleaching powder, chemical manures show increases in both quantity and value, also candles and cement. The decreases occur in painters' oils.

PORTS OF FOREIGN AND COLONIAL PRODUCE.

ARTICLES.	Quantities.	
	1896.	1897.
..... Cwt.	75,177	77,098
and Regulus..... Tons.	24,227	18,684
..... Cwt.	34,708	48,708
..... Cwt.	91,834	24,953
..... "	18,474	18,496
..... "	8,741	47,668
..... £.	54,233	51,603
..... Cwt.	26,635	22,551
..... Gall.	14,958,840	13,235,414
..... Cwt.	74,344	56,787
..... Tons.	813	—
da..... "	938	565
..... "	47,789	62,720
..... Cwt.	159,921	156,159
Stearine..... "	161,922	102,177
ce..... Tons.	22,865	24,678
..... "	25,025	35,864

PORTS OF BRITISH AND IRISH MANUFACTURES.

ARTICLES.	Quantities.	
	1896.	1897.
..... Cwt.	323,363	376,186
..... Tons.	25,217	36,089
ke..... "	3,284,360	3,406,053
inds..... Cwt.	61,927	81,884
el..... Tons.	311,596	287,719
anures..... "	35,145	50,496
..... "	5,044	3,512
..... "	55,508	48,554

GOLD OUTPUT IN THE RAND.

Output from the Rand district during the past month, as cabled Witwatersrand Chamber of Mines, amounts to 211,210 ozs. However, is exclusive of the returns of several companies under the title of the "Association of Mines of the South Africa," give their joint output as 48,393 ozs. The month's total, therefore, 259,603 ozs., and shows an increase of 17,124 ozs. over the previous total, and an increase of 46,185 ozs. over the corresponding month of 1896. The following are the monthly returns since the beginning of 1894:—

	1894.	1895.	1896.	1897.
oz.	oz.	oz.	oz.	oz.
January	149,814	177,463	148,178	209,832
February	151,870	169,295	167,018	211,000
March	165,372	184,945	173,952	232,067
April	168,745	186,323	176,707	235,698
May	169,773	194,580	195,008	248,305
June	168,162	200,941	193,640	251,529
July	167,953	199,453	203,873	242,479
August	171,977	203,573	213,418	259,603
September	176,707	194,764	202,561	—
October	173,378	192,652	199,889	—
November	175,304	195,218	201,113	—
December	182,104	178,428	206,517	—
Total	2,024,159	2,277,635	2,281,874	1,890,513

ENGLAND.—An interesting pamphlet has recently been issued by the Non-Carves Bye-product Coke Oven Construction and Co., Ltd., 20, Mount-street, Manchester. It sets forth the achievements of these ovens, and gives particulars of the plants already working in this country.

THE PATENT LAW.

OUR English patent law differs from that of our commercial rivals in the careless liberality with which it treats foreigners. They obtain full protection in this country by complying with the most ordinary formalities; they occupy the time of our Courts, often to an inordinate extent, as in some recent cases; they can enforce the extreme technical rights of a patentee, even to the grave prejudice of native industry and of the common weal; yet they are under no obligations to the State, nor do they make any return for the advantages they enjoy. The native inventor obtains the benefit of a limited monopoly on the ground that he is thereby encouraged to spend time, labour, and money in developing industries which furnish employment, circulate capital, and aid this country to maintain and extend its foreign trade. The foreign inventor enjoys precisely the same benefits at the hands of the State, but is not bound to render any of these services in return. On the contrary he is assisted and encouraged to employ labour in other countries, to circulate foreign capital, and to promote the commercial advancement of our rivals in the markets of the world. He can and does make every ounce of his commodity abroad, dumps it upon our market, and defends his monopoly against some native product, probably just as good, often upon the strength of a quibble which it takes a Judge and an army of experts ten days to determine. This is probably supposed by some to be free trade. As a matter of fact it is diametrically opposed to free-trade principles. Free trade forbids all monopolies, limited or not, on the ground that they are *prima facie* opposed to the public interest. Only when this presumption can be rebutted by evidence that the public interest is better served by granting than by withholding a monopoly can the bestowal of protection be defended on public grounds. Now this country has no interest in protecting the inventions of foreigners. The foreign inventor will go on inventing upon the encouragement given to him by his own Government, and if he seeks protection at home he cannot avoid disclosing his process to the world. The interest of this country lies in following the free-trade presumption and refusing protection because in that way it encourages the production by native labour and capital of what would otherwise have to be imported, to the gain of the foreign monopolist. No State is bound to create a monopoly for the benefit of individuals, least of all for the benefit of persons who are not its own subjects, but rather their active competitors. Before they obtain protection they ought to show, much more clearly than the native inventor, in what way the State is to obtain advantages for itself and its own subjects.

Other countries are careful to insist upon this indispensable condition of protection. Admitting as they do that the civilised world has a collective interest in the encouragement of invention, they yet refuse utterly to contribute to that encouragement without remuneration. In France, for example, a patent is not valid unless it is actually worked in the country within two years after it is granted. In other words, the patentee is allowed two years to show that he is going to give an equivalent by employing French capital and labour, and if he fails to do this his monopoly lapses. By the German law an inventor is bound within three years to put his invention to practical use within the realm, and to grant licences on reasonable terms to other persons who may desire to work it. Failure to comply with these conditions makes the patent void. The law in both these countries is simple, reasonable, and equitable. The State gives two or three years' protection upon credit. Thus the inventor has time to discover for himself and to show to others what the invention is worth in practice, and also to find out whether it is better to keep the working in his own hands or to license other parties. If it is not worth his while to do one thing or the other within the realm, then he is not allowed to flood the market with his commodities made abroad. There is no analogous provision in the English patent law except a clause dealing with compulsory licences, which is a miracle of futility. It runs thus:—"If on the petition of any person interested it is proved to the Board of Trade that by reason of the default of a patentee to grant licences on reasonable terms—(a) the patent is not being worked in the United Kingdom; or (b) the reasonable requirements of the public with respect to the invention cannot be supplied; or (c) any person is prevented from working or using to the best advantage an invention of which he is possessed—the Board may order the patentee to grant licences on such terms as to the amount of royalties, security for payment, or otherwise as the Board, having regard to the nature of the invention and the circumstances of the case, may deem just, and any such order may be enforced by *mandamus*." Here, instead of the simple and automatically working provisions of the French and German law, we have the matter referred to the discretion of the Board of Trade, which can act only after an expensive inquiry in which the whole *onus probandi* is thrown upon the wrong shoulders. It is for the person who gets the monopoly to show cause why he should retain it, not for ordinary citizens to prove, first, that they have a *locus standi* which is not specifically conferred, and, second, that the patent is contrary to the public interest. It is not perhaps very

wonderful that this remarkable clause has never been enforced. At present, however, there are several petitions before the Board of Trade, invoking its power under the Act to compel certain foreign patentees to grant licences to English manufacturers. As in some cases very important and lucrative manufactures are in question, the action of the Department will be watched with much interest.

But what is the Board of Trade to do? This absurd clause has evidently been framed without a thought of the foreign patentee. It is directed exclusively against the British patentee who may refuse proper facilities to the British public. The Board of Trade, after inquiry, is to make an order, and such order may, if necessary, be enforced by *mandamus*. But what does the foreign manufacturer care for the *mandamus* of a British Court? He is not within its jurisdiction, and it is more than doubtful whether any Court could be found to make itself ridiculous by issuing an order which it has no power to enforce. There is no power to cancel the patent, or to stop the importation of the commodity, although these are the only means at command of bringing the foreign patentee to terms. It would seem, therefore, that, in order to secure for the State in this country the advantages insisted upon by other countries in return for conferring a valuable monopoly, it is necessary to make a change in the law. Instead of the ineffectual 22nd clause just quoted, there ought to be a provision something to this effect:—"If within three years of its issue, or in the case of an existing patent within eighteen months from the passing of this amendment, a patent is not worked within the realm to an extent adequate to meet the home demand either by the patentee himself or by licensees, the patent shall become void." In this way all patentees, whether British or foreign, would be placed upon the same footing, and the remedy for existing evils would work automatically. Any patentee in advance of his age would retain protection, because there would be no public demand for him to neglect. The settlement of royalties would not be left to the judgment of the Board of Trade, but would be effected by agreement between the parties interested. Finally the State would reap the advantages from foreign patents which it now derives only from English ones, and which all our commercial rivals insist upon securing in return for protection.—*Times*.

THE SANITARY VALUE OF A BACTERIOLOGICAL EXAMINATION OF WATER.

By E. K. DUNHAM.

SEVERAL years ago, when connected with the Massachusetts State Board of Health, the author had occasion to make bacteriological examinations of a large number of samples of water derived from various sources. The method then in use was to mix one cc. of the water with about nine cc. of sterile nutrient gelatin, and to pour the mixture upon sterilized glass plates, where it solidified in a moderately thin layer. These plates were then kept under cover for two, three, or four days to protect them from dust and from drying, after which they were examined either under the microscope, with a hand lens or with the unaided eye. The number of colonies that developed on these plates was then recorded.

It appeared to me at that time, 1887, that it was not possible to judge of the quality of a water from the data so obtained. This opinion was supported in a striking manner by observations, of which the following is a good, though somewhat extreme, example. The water supply of one of the towns near Boston was derived from a series of driven wells, consisting of iron pipes forced into the sandy soil. All but one of these wells were connected with a pipe leading to the pump which drove the water into the town reservoir. The remaining well was not connected with the others, but was used for making observations on the level of the ground water. It was kept covered, except when used for that purpose.

I found that the water taken from the tap at the pumping station, after it had passed through the pump, contained two bacteria to the cubic centimeter, *i.e.*, it was practically sterile. Water taken from the observation well contained about 5,000 bacteria to the cubic centimeter.

The water in both cases was from the same source, namely, the ground water, but that which passed through the closed pipes was protected from infection, while that from the observation well had been exposed to the entrance of bacteria from the air. The bacteria found in the water from this well were all of the same species, and the inference was plain that, of those bacteria which accidentally gained access to the water, only one species had found the conditions favourable for its indefinite multiplication. There could not be any doubt that the two waters were equally fit for drinking, provided the single species, which was present in such abundance, was unobjectionable. At that time the maximum number of bacteria that was considered permissible in a good water was set at 250; yet this perfectly wholesome water contained twenty times that number.

Similar observations soon led me to the conclusion that a water might contain a large variety of bacterial species without being in-

jurious to health. The water of small brooks flowing from springs in wooded regions frequently contains numerous species of bacteria derived from the air and the banks of the stream, yet there is no reason to suppose that such water is unfit for drinking.

The manner then in vogue of interpreting the results of such a bacteriological examination by the plate method, appeared to me to be artificial and inadequate, because the accepted standards of purity were based upon quantitative differences. The method itself was not wholly without value, for it appeared possible to gain some insight into the probable bacterial history of a water by a simple inspection of the plate cultures prepared from it. Pure waters, originally free from bacteria, but subsequently exposed to the atmosphere, when examined by plate culture, yielded colonies composed of bacteria, which, as a rule, failed to liquefy gelatin, and frequently possessed chromogenic powers. The water accumulating in collecting wells or trenches protected from surface drainage by walls of brick or stone and covered by structures permitting free ventilation, gave plate cultures of this character. The bacteria it contained were derived from the air.

Those waters which had received additions coming in contact with vegetation and the upper strata of the soil, contained the bacillus subtilis, the bacillus mycoides, and the bacillus figurans, all easily recognisable by the characters of the colonies resulting from their growth on gelatin plates. The waters of unpolluted brooks and small streams arising from springs in rural districts contained these bacteria, as well as those coming from the air.

It is doubtful whether any of the waters from larger streams or rivers, which I examined, were free from pollution by either sewage or waste from factories. The plate cultures from such waters revealed a varied flora, and it was not possible to identify, on the plate cultures, the species that I regarded as evidence of the presence of air bacteria and bacteria derived from the soil. It is probable that the bacteria resulting from the pollution of the water were more abundant or grew more rapidly than those from the air and soil, and, in consequence, concealed their presence.

Plate cultures made from sewage and those prepared from waters that had certainly received sewage, contained colonies of a yellowish or brownish colour, when viewed under the microscope. They were round, oval or lenticular in shape, and usually presented a multi-contoured appearance, if the plates were not too crowded. These colonies I now believe to have been those of the common colon bacillus. The practically constant presence of such colonies, on plates from water contaminated with sewage, led me to look upon them as an indication of dangerous pollution.

I think there were good grounds for the opinion I then formed that the mere number and variety of bacteria in water are of comparatively little significance, but that the presence of certain species might be accepted as indicating that the water had been exposed to certain pretty definite conditions before it was submitted to bacteriological examination, and that a knowledge of those conditions was of importance to a just estimation of the probable risk of drinking the water.

The chief aim of an examination of water with reference to its fitness for drinking is to learn whether it contains, or is likely in the future to contain, poisonous substances, or the contagia of disease. The detection of mineral poison falls within the domain of chemistry. The actual isolation of specific bacteria of disease can only be done by bacteriological methods. But in the vast majority of the cases in which an examination of water is required, mineral poisons are not present in notable quantities, nor are pathogenic bacteria so abundant as to be certainly detected by the methods now available. The object of an examination of the water in these cases is to estimate the degree of probability that in some future time the particular water in question may become the carrier of infection. This question practically resolves itself into the detection of pollution with sewage, which may at some time contain dejecta from cases of disease. The usual chemical examination aims at detecting such pollution, and a bacteriological examination may be directed towards the same end. By the former method, the soluble substances, which are abundant in sewage, are estimated. By the latter, the bacteria derived from the intestinal tract and those of putrefaction, which thrive in solutions rich in animal organic matter, are sought, and, if need be, isolated. When sewage is mixed with water, both these methods for its detection are applicable, but it appears to me that the bacteriological test is capable of being the more delicate and precise of the two methods.

An exhaustive bacteriological examination which undertook the isolation of every species present in a given water, and endeavoured to trace the way in which each species gained access to the water, would require a much wider and more exact knowledge of the distribution of bacterial species than we at present possess. And even if that knowledge were available, such an examination would require a very protracted study of the water. It appears necessary, therefore, to resort to a few simple procedures which are likely to give the information strictly required for a just conception of the general bacterial history of the water and to base the judgment of the sanitary value of the water upon the results obtained.

I will give a brief outline of the methods that appear to me most likely to furnish useful knowledge respecting the wholesomeness of a water from a bacteriological standpoint, assuming that the main questions to be answered are:—(1) whether the water has been polluted with sewage, and (2) in case there are many bacteria in the water, whence they were probably derived.

It so happens that most of the bacteria found in the air are strict aerobes—i.e., are incapable of growth, save in the presence of oxygen. We may take advantage of this fact to gain a rough idea of the number of bacteria in the water which owe their presence to aerial contamination. My plan is to prepare four gelatin plates, with one cc. of water on each plate, and to allow two of them to develop in an ordinary moist chamber, the other two being kept in an atmosphere of hydrogen. When those which have been exposed to oxygen are ready for counting, all four plates are examined and the number of colonies estimated. I will give examples of the two sets of observations, illustrating the results obtained by this method.

Experiment 1.—Distilled water taken from a demijohn which had been exposed to contamination from the air for at least two weeks, was examined in this way. At the end of two days the plates grown with access of air contained 1,395 colonies. Those grown in hydrogen showed no colonies at all. The latter were then placed in a moist chamber, where they were exposed to oxygen for two days. At the end of this time they contained 1,469 colonies, showing that the bacteria in the water were not killed by the hydrogen, but were incapable of growing to any great extent when in an atmosphere of that gas.

Experiment 2.—A similar experiment was made with croton water. The plates grown in air contained 135 colonies. Those grown in hydrogen contained 30 colonies, but, after exposure to the air, the number increased to 128 colonies. It seems, therefore, that the croton water contains species that were at least facultative anaerobes, and probably some that were not originally derived from the air.

Those bacteria that are capable of producing specific diseases are nearly all facultative anaerobes, so that it is safe to infer that the distilled water taken for the first experiment was fit for drinking.

It is probable, from their microscopical appearance, that some of the colonies on the hydrogen plates from the croton water were those of the proteus vulgaris, one of the bacteria most frequently found in putrefying organic matter of animal origin.

Although the bacteria prevalent in the air are usually dependent upon the presence of oxygen for their multiplication, it must not be assumed that all the strictly aerobic bacteria found in a water have been derived from the air. Many of those occurring in the soil are incapable of growing without a supply of free oxygen. This is shown by the following experiment.

Experiment 3.—One gram of soil from near the surface of the ground was introduced into a litre of water which had been sterilised by prolonged boiling, and after vigorous shaking plates were prepared as in the preceding experiments. The plates grown in air contained 38,771 colonies, those grown in hydrogen 534 colonies. The general appearance of the two sets of plates was very different. The air plates contained numerous colonies of mycoides, figurans, and the hay bacillus. The hydrogen plates contained only a slight growth of figurans, visible under the microscope. The hay bacillus and mycoides did not develop on the plates grown in hydrogen.

If we now turn our attention to the results obtained by this method when sewage is examined, we shall find that the number of facultative bacteria is very much greater in proportion to the number of strict aerobes than was the case in the experiments with water, contaminated with species from the air or soil.

Experiment 4.—Plates were prepared each with one cc. of sewage from one of the main sewers of Massachusetts. After 24 hours the colonies were estimated with the aid of the microscope. The air plates contained an average of 51,516 colonies, the hydrogen plates 49,871, a difference of only 645 in over 50,000.

Experiment 5.—One cc. of the same sewage was added to one liter of sterilised distilled water, and with one cc. each the plates were prepared. Those grown in air contained 260 colonies, those grown in hydrogen 278. In this case the number of colonies on the hydrogen plates was greater than the number on the air plates, a circumstance that need occasion no surprise when we reflect that the sewage contained little masses of suspended matter that would prevent a perfectly uniform mixture with water, and might, therefore, easily cause some of the samples, taken for bacteriological examination, to contain more bacteria than others.

Experiment 6.—The diluted sewage used for the last experiment was allowed to stand at the room temperature for three days and the examination was then repeated. The plates grown in air contained 18,187 colonies; those grown in hydrogen 17,197.

The last three experiments show that a large proportion of the bacteria in sewage are probably facultative anaerobes, and that a considerable dilution of the sewage does not prevent a rapid multiplication of the bacteria it contains. Such a dilution would improve the chemical

character of the water, but leaves its bacteriological character unchanged.

A comparison of the results of the six experiments, detailed above, demonstrates that the method used is capable of throwing considerable light on the significance of the bacteria found in a sample of water.

It would not do, however, to leave the consideration of that method without pointing out a possible source of error in the deductions, drawn from the results of these experiments. It might be that there were two sets of bacteria on the plates, one consisting of strict aerobes, and the other of strict anaerobes, and that one or the other of these groups would develop on the plates, according to whether they were exposed to oxygen or not. I believe myself justified in excluding this possibility, on the ground that the characters of the colonies on the hydrogen plates were essentially the same as some of those on the plates grown in the air, both when examined under the microscope and with the unaided eye. The fact that the hydrogen plates, when subsequently exposed to oxygen, contained practically the same number of colonies as those which were originally grown in the presence of oxygen, also tends to exclude the source of error we are considering.

The simple procedure used in the above experiments would not alone suffice to reveal the presence of sewage. We must gain a more definite idea of the characters of the bacteria in the water, where it is shown to contain facultative anaerobes before we are justified in concluding that they are an indication of sewage contamination.

All sewage that receives human feces contains the bacillus coli communis, or if it does not, has been subjected to germicidal agencies, that would also kill pathogenic bacteria, derived from cases of disease. It is fair to assume that ordinary sewage would also contain the common bacteria of putrefaction. We must, therefore, direct our attention to the means of demonstrating the presence or absence of those species in the water under examination.

I am inclined to believe that the best way to accomplish this is the application of the putrefactive test based upon the method proposed by Schardinger in the *Centralblatt für Bacteriologie und Parasitenkunde*, 10, 833, 1894.

To about ninety cc. of the water, ten cc. of a ten per cent. pepton, five per cent. salt solution, previously sterilised, are added. The mixture is made in a sterile Erlenmeyer flask, provided with a cotton plug. A strip of paper, impregnated with lead carbonate, is suspended over the mixture and the flask is then placed in the incubator at 37° C. for twenty-four hours. Under these conditions of temperature and nutrition, the colon bacillus and the bacteria of putrefaction readily multiply, and the latter cause the production of hydrogen sulphide, which discolours the lead paper. A pure water will not cause a darkening of the paper, but as it is possible that a water which would not cause infection, either at the time or in the future, might contain putrefactive bacteria, this test alone should not be relied upon to decide whether a water is fit for drinking or not.

In order to detect the presence of the colon bacillus a loopful of the above mixture, after the twenty-four hours of incubation, may be used for the preparation of a series of plate cultures in various degrees of dilution. From these plates there is no difficulty in obtaining pure cultures of that bacillus, which may be used for further cultures made for the purpose of definitely identifying it, and, especially, of distinguishing it from the bacillus equi intestinalis, which appears to be the most common species present in the feces of horses.

This method takes considerable time, and if it be desired to simply prove the absence of the colon bacillus, there is a shorter method which can be employed. It consists in inoculating a series of fermentation tubes, containing nutrient bouillon, to which two per cent. of glucose has been added, with the water under examination, using one cc. of water for each fermentation tube. The tubes are then placed in the incubator. The colon bacillus has the power of causing fermentation with a production of gas when grown in sugar solutions. This gas collects in the upright limb of the fermentation tubes. If no gas is found in any of the tubes, it may be assumed that the colon bacillus was absent. But if gas is found it does not prove that the colon bacillus was present, for other bacteria are capable of decomposing sugar with a production of gas. It then becomes necessary to isolate the bacteria in the fermentation tube with a view to determining the presence of the colon bacillus, a matter of no difficulty.

The procedures which are now outlined constitute those which are thought most likely to throw light upon the sanitary value of a water. Let me next call attention to the results obtained by their employment in the examination of some samples of water.

(To be continued).

MANGANESE via THE CANAL.—The *Clan Graham* has arrived in the canal, bringing a large cargo of about 1,500 tons of manganese ore for delivery at Ellesmere Port. This is the first consignment via the Ship Canal.

Trade Notes.

FAILURE OF A CHEMICAL MERCHANT.—A meeting of the creditors of Derbyshire Mayall, of Beechfield, Harriet-street, Streteford, who has carried on business in Dickenson-street, Manchester, as a chemical merchant and drysalter, was held last week at the offices of the Official Receiver in Bankruptcy. Mr. A. B. Potter, assistant official receiver, presided. From the debtor's statement of affairs it appears that his liabilities amounted to £3,477. 18s. 2d., and the assets to £807. 4s. 9d. A law suit, ill-health, and loss on contracts were put down as the causes of failure. The meeting appointed by Mr. Haworth, accountant, Faulkner-street, Manchester, as trustee, and a committee of inspection was also chosen.

SWEETER THAN SUGAR.—The newly-discovered chemical substance, sugarine, is likely to have an important influence upon commerce in several directions. Unlike saccharine, which never became very popular, sugarine contains none of the obnoxious para acid. It is a chemically pure substance, 600 times as sweet as sugar, and yet obtainable at one-twelfth the cost. If it should prove the healthy, cheap, and perfect substitute for sugar which the discoverer, Mr. E. R. Savigny, believes it to be, it will doubtless soon be utilised for domestic and industrial purposes, especially as its antiseptic properties are said to cause jams and other articles prepared with it to keep for years. The opinions of experts and the test of experience will soon show how far the inventor's expectations are realisable.

TREATING LONDON SEWAGE.—The annual report of the Main Drainage Committee of the London County Council just issued gives the following table, showing the quantities of crude sewage treated, chemicals used in precipitation, and sludge produced, as well as the quantity of refuse intercepted at the gratings at the outfall works at Barking and Crossness during the past year:—

Sewage treated...	78,395,394,000	gals.
Lime used	20,334	tons
Proto-sulphate of iron used ..	4,718	tons
Sludge produced... ..	2,184,500	tons
Average per week	42,010	tons
Refuse intercepted at gratings	4,594	tons

For the purpose of the precipitation-operations contracts were entered into during the year for the supply of 23,000 tons of lime at 11s. 7d. per ton, and 5,250 tons of proto-sulphate of iron at 21s. 3d. per ton.

MANCHESTER SEWAGE.—The Manchester City Council met on Wednesday last specially to consider the propriety of promoting a Bill in Parliament to authorise the Corporation to construct works for the purpose of conveying and discharging the effluent resulting from the chemical treatment of the sewage of the Corporation at Davyhulme into the river Mersey. It was urged on behalf of the Rivers Committee that this was the most practicable way out of the sewage difficulty, and that the alarmist tone adopted by some critics was by no means warranted. Mr. Alderman Southern expressed a belief that the Council were on the verge of a huge and expensive undertaking. He had no confidence at all that the estimated expenditure (£258,000.) would not be exceeded. Mr. Southern suggested that the Committee should make the effluent as pure as possible, turn it into the river Mersey (without any culvert scheme), and then, if need be, fight the Mersey and Irwell Joint Committee. On a division the resolution was adopted by 49 votes to nine. As the resolution to be effective must be carried by at least 53 votes, it is probable that another meeting of the Council will be held with a view to securing the statutory majority of more than one-half of the members of the Council.

WORK IN PAPER MILLS.—At the Trade Union Congress last week Mr. Ross (Manchester) moved—"That the Parliamentary Committee be instructed to take steps towards securing an amendment of the Factory and Workshop Act prohibiting any working in paper mills or textile mills from Saturday noon to Monday morning 6 a.m., except to do repairs." This resolution, he said, might seem unimportant, but if it was put in operation as the law of the country it would be very far-reaching in its influence in regard to the conditions of work in the paper mills of the country. Instead of enjoying eight hours they worked twelve hours for five days a week, and often eighteen hours on Saturday, while on Saturday in some cases they worked up to ten o'clock on Sunday morning. He could give a case where men had worked 100 hours in one week. It was nothing less than a disgrace. In addition, the workers had frequently no proper facilities in the mills for taking their meals. Mr. Allen Gee (Huddersfield), in seconding the resolution, said they were all in favour of one holiday in even, but that was not enough; they ought to have the half-holiday on Saturday. It would be impossible to obtain this except by legislation, and he thought a clause providing for such a holiday should be inserted in the Factory Act. Had the last Government remained in power he believed they would have succeeded in introducing a clause. The resolution was adopted.

A STEEPLEJACK'S TERRIBLE DEATH.—A shocking accident occurred on Tuesday at the works of M'Dougall Brothers, chemical manufacturers, Chadderton. John Greenwood, Bow-street, Oldham, and two other steeplejacks were engaged repairing the top of the big chimney, when a portion of the coping and part of the brickwork gave way without the slightest warning. Greenwood, who was working above this part, was precipitated to the ground after he had made a wild attempt to save himself, and was killed. One of his fellow-workmen also fell but he managed to catch hold of the scaffolding and so saved himself from a terrible death. The chimney was 94 yards high.

PRICE'S PATENT CANDLE CO., LTD.—An extraordinary general meeting of this company was held last week at the Cannon-street Hotel for the purpose of declaring a dividend.—Mr. T. C. Wright (the chairman) said as compared with the accounts of last year those now submitted showed a falling off of £2,000. Consequently, it had been thought prudent by the directors to recommend a dividend of 15 per cent. instead of 16 per cent. There was in this reduction no cause for alarm, because the falling off had not been in the volume of trade, but was owing to lower prices in consequence of the competition. There was no reason to doubt that this company would be able to hold its own in any markets. There had been no falling off in the trade during the present half year, and things were going as satisfactorily as could be expected at a time when there was so much competition. The directors thought the present state of things could not last very long; but they were quite prepared to meet the competition, having ample capital, a large reserve fund, and the command of some of the best experts anywhere in the trade. He concluded by moving the declaration of a dividend of 15s. per share, which would absorb £28,125., leaving £14,499. in hand. The motion was seconded by Sir Peter Spokes, and carried unanimously.

SALT SHIPMENTS FROM THE MERSEY.—The duty imposed in the United States has already produced the result anticipated here, and shipments have fallen off very sharply. Scotland has also taken less salt than last year for fishery purposes, so that the total for August does not wear a satisfactory aspect. The detailed returns for August show a falling off of nearly 7,000 tons in the quantity shipped to the United States, the figures for August being 3,046 tons, against 9,993 tons. The only other country which shows a serious decline is Scotland, the tonnage being 1,367, compared with 7,844 tons. Decreases are noticed to the West Indies, Central and South America, Africa, Australasia, and to other ports in the United Kingdom, there being increased shipments to British North America, Asia and European ports. The figures for Liverpool are 37,522 tons, against 39,480 tons; and for Runcorn and Weston 7,586 tons, compared with 17,023 tons; the grand total being 45,108 tons against 56,503 tons. The shipments for this year previous to August show more favourable returns, increases being noticed to the United States, Africa, Asia, Australasia, and decreases to British North America, West Indies, Central and South America, United Kingdom, and European ports. The grand total shows that 379,801 tons were shipped, compared with 365,256 tons last year. Of these, 293,729 tons (compared with 259,182 tons) were shipped from Liverpool, and 86,072 tons (against 106,074 tons) from Runcorn and Weston.

Market Reports.

TAR AND AMMONIA PRODUCTS.

There is practically no change in the position of tar products. Benzols are a little easier at 1s. 10d. for 90's, and at 2s. for 50/90's; but carbolic acid and naphthas show no change, and are quiet as a whole. Anthracene is about the same. Pitch is quoted 20s., f.o.b. East Coast.

Sulphate of ammonia is in good demand at firm prices. Business, however, has been rather restricted by the shortness of supplies. Current prompt values are: Beckton £7. 17s. 6d., London outside makes £8. 2s. 6d., Liverpool £8. 2s. 6d., Hull £8., and Leith £8. to £8. 2s. 6d. Nitrate of soda quiet at 7s. 4½d. to 7s. 7½d. per cwt.

MISCELLANEOUS CHEMICAL MARKET.

There is a continued fair demand for alkalies and bleaching powder, and prices are firm. Makers are holding strongly for advanced prices on caustic soda, and business has been done both for prompt and forward delivery on basis of current quotations, viz.—f.o.b. Liverpool, 77%, £8. 15s.; 74%, £8. 5s.; 70%, £7. 10s.; 60%, £6. 10s., 10 ton lots and upwards. For home trade prices f.o.r. may be taken as 7s. 6d. to 10s. per ton less on spot and forward business. Alkali steady at £3. 7s. 6d., bags, f.o.r. Bleaching powder continues in good request for export, and price is firm at £6. 10s. to £6. 15s., f.o.b.—forward

business has been done £6 5s., f.o.r. Soda crystals and bicarbonate unchanged. Sulphur firm at £4. 12s. 6d. Saltcake 19s. to 20s. for prompt and forward delivery, f.o.r., in bulk. Sulphate of copper steady at £16. 7s. 6d., f.o.b. White powdered arsenic moving freely at £21. 15s. to £22., Garston. Potash, caustic and carbonate, in steady demand, and without alteration in value. Brown acetate of lime firm at £5. 2s. 6d., ex ship; other acetates quiet and without improvement in price. Lead salts generally firm. Nitrate of soda still offers at 7s. 3d. to 7s. 4½d. Bichromates unchanged. Prussiate of potash, 5¼d. Cyanide 98/100%, 10½d. per lb. Green copperas continues in good enquiry and price is firm. No signs of improvement are yet visible in the general demand for chemicals.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron: Scotch warrants closed at 44s. 3d.; Middlesbro', 41s. 2d. cash; and hematite, 46s. 11d. Copper firm: Chili bars, G.O.B.'s and G.M.B.'s, closed at £49. 11s. 3d. to £49. 16s. 3d. cash, and £49. 17s. 6d. to £50. 2s. 6d. three months. Tin easy: Straits closed at £61. 13s. 9d. to £62. 3s. 9d. cash, and £62. 3s. 9d. to £62. 13s. 9d. three months. Australian £62. 15s.; English ingots, £65. to £65. 10s. Lead: Spanish, £13. 10s.; English, £13. 15s. Silesian spelter, ordinary, £17. 10s. Nickel, 1s. 2½d. Antimony, £29. 10s. Quicksilver: First hands, £6. 15s.; second hands, £6. 14s. 6d. Copper shares steady: Cape, 2½ to 2¾; Copiapo, 1½ to 1¾; Libiola, 2 to 2¼; Mason and Barry, 2¾ to 3; Rio Tinto, 2¾ to 2¾; Tharsis, 5¾ to 6¾.

REPORT ON MANURE MATERIAL.

There has been a quiet but steady market, quotations for the most part being unchanged. Owing to advanced freights and good Continental demand shippers of 75/80% Florida Rock are very firm. The quotation for cargoes, c.i.f. to good U. K. ports, is 6d. per unit, but ¾ per unit less would probably be business if bid. Sellers of South Carolina and 58/63% Algerian are firm at 5d. per unit, c.i.f. to U. K. There is nothing to report in River Plate bones, but there would probably be buyers at an advance on £3. 12s. 6d. per ton. The spot market has been cleared of East Indian bone meal at up to £3. 15s. per ton, and an advance on this price would now be required from second hands. For shipment, sales of fine Kurrachee have been made at £3. 17s. 6d., and this price would still be accepted; £3. 17s. 6d. required for crushed Kurrachee bones on spot. Nitrate of soda remains quiet at 7s. 6d. for good, up to 7s. 7½d. for fine quality on spot. In the forward position there is nothing fresh to report.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is very quiet, and the only business to report is in Accra, at £18. 15s. Olive is very firm, and continues in fairly good demand considering the scarcity of supplies. Linseed is quiet: Liverpool makes in export casks are quoted 17s. 3d. to 18s., a turn in favour of buyers. Cottonseed is firm, Liverpool refined still standing at 16s. 9d. to 17s. 6d. per cwt. Moderate sales of castor are being made, the market being very firm, with good seconds Calcutta at 37s. 8d., and first pressure French 3½d. per lb. Tallow is quiet. Resin begins to show signs of weakness, the demand being feeble for all grades at present prices. Spirits of turpentine are firm with a fair business doing on spot at 22s. 6d. to 22s. 9d. per cwt. Petroleum steady: American, 5¼d. to 7d., and Russian refined 5d. per gallon.

CAKES.—The market generally is steady, and prices are well maintained, with the exception of American decorticated cottonseed.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The positions of oil have experienced but little change. Refined cotton oils are the same quotations, but linseed oil has receded about 10s. per ton. The importations to date compared with the same time a year ago have been: linseed, 436,215 qrs., against 534,103 qrs.; rapeseed, 59,995 qrs., against 71,247 qrs.; cottonseed, 130,182 tons, against 105,950 tons; oilcake, 7,438 tons against 9,248 tons; olive oil, 3,289 tons against 4,500 tons. Tar, 7,279 barrels against 11,636 barrels. Linseed oil is flat, spot, naked, 15s. 3d. cwt.; last four months 15s. 4½d., first four months 15s. 6d. per cwt., naked. Refined and boiled, £1. to £1. 10s. per ton extra. Refined cotton oil firmer, spot naked 14s. 7½d. per cwt.; Nov.-April 14s. 6d.; crude ditto, spot, 13s. 4½d.; Nov.-April, 13s. 1½d., filtered. Refined, £1. to £1. 5s. per ton extra. Ordinary casks £1., and barrels £1. 10s. per ton extra. Turpentine £1. 2s. 3d. per cwt. Olive oil from £29. 15s. for Seville to £32. for Candia. Many attempts to advance rates end in failure, owing to the slackness in demand. Olive oil soaps,

62% fatty acids, £16. 10s. per ton. Oleines unchanged. Cod oils, £15. to £18. per ton. Danish butter, 119s. per cwt.; Dutch, 112s. to 115s.; Irish, 98s. to 100s. Lard steady, American in pails, 28s. per cwt.; Irish, in bladders, 40s. to 44s. 2d. per cwt.

CAKES.—Linseed cakes are a firmer market and steady thereat. 95% pure, £7. to £7. 2s. 6d. per ton; Russians, £6. 17s. 6d. to £7. Oilcakes, £6. 2s. 6d. to £6. 5s.; Americans, £6. 12s. 6d. to £6. 15s. ex store. Cotton cakes: a quiet demand, but prices very firm. Best makes, £4. 3s. 9d. to £4. 5s.; seconds to £4. 2s. 6d. per ton, spot. Nov.-April, £4. to £4. 2s. 6d.; seconds 2s. 6d. per ton less. Black Sea rape cake, £5. nominal in the absence of supplies.

PAINTS.—No special feature of any note. Prices remain unchanged.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

The feeling in the market for sulphate of ammonia is still a mending one, and good progress has been made since this day week, although the value of the article is still far below what would be satisfactory to the producer. The spot price to-day is a full £8., f.o.b. Leith, and a good indication is the resumption of business on the forward basis. For this a little over £8 has been obtained by more than one maker. In the general market bleaching powder is found to be weaker, and quoted at a lower figure. Caustic soda also is easier, but with prices not yet dislodged to any appreciable extent. Sulphate of copper is quoted slightly lower, but lead products continue on the rise. Soda crystals reported very scarce, but no change of price resulting as yet. Mineral oils and paraffins all as before, and mostly weak.

Chief prices current are:—Soda crystals, £2. 12s. 6d., nett, Tyne, soda ash, 48/62°, £4. 2s. 6d. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £4. 17s. 6d. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 5s., 70/72° £7. 10s., 60/62° £6. 10s., and cream 60/62° £6. 5s. all nett, Liverpool; bleaching powder, 35/37°, £6. 5s. nett, Tyne; saltcake, 19s. to 20s.; borax, English, refined, £14. 15s. and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4d. less 5%, any port; nitrate of soda, 7s. 4½d. to 7s. 9d.; sulphate of ammonia, £8. prompt, f.o.b. Leith; salammioniac, first and second white, £33. and £31. nett any port; sulphate of copper, £16. 5s. to £16. 7s. 6d., less 5% Liverpool; paraffin scale, hard, 1¼d. to 1½d. per lb.; paraffin wax, 120° semi-refined, 1¼d. to 2d. per lb.; paraffin spirit (naphtha), 6½d. per gallon; paraffin oil (burning), No. 1, 5¼d., and crystal, 6d., at Glasgow and other big centres, for Scotch buyers (English sales a shade lower); ditto (lubricating) 865° £5. to £5. 5s., 885° £5. 15s. to £6. 5s., and 890/895° £6. 10s. to £7. Week's imports of sugar at Greenock were nil.

TYNE CHEMICAL REPORT.

TUESDAY.

Market for chemicals remains unchanged, with perhaps a shade better demand. Caustic 70%, £7. 10s., and 76/77% £8. 15s. to £9. per ton. Sulphur scarce at £5. per ton. Soda crystals £2. 12s. 6d. per ton, gross weight, locally.

Bleaching powder, softs, £6. 10s. per ton, nett; hards, £6. 15s. per ton, nett; caustic soda, 70% £7. 10s., and 76/77% £9. per ton; recovered sulphur, 2 cwt. bags, £5. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. 6d. per ton, nett; do., 52%, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95% crude calcined, £6. per ton nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminates of soda, £30. per ton, nett.

SALT.—South Durham salt unaltered at 9s. per ton f.o.b. Tees.

COALS.—The coal trade is fairly well sustained, and there is a good demand for Northumbrian steam coal. Consumption of gas coals is also steadily on the increase. Coke continues firm, and in large sale for export. To-day's prices: Best Northumbrian steam, 8s. 6d. to 8s. 9d. per ton; second qualities, 7s. 9d. to 8s. per ton; small steam, 3s. 6d. to 3s. 7½d. per ton; gas coals, 7s. 6d. to 7s. 9d. per ton; coke, 20s. to 21s. per ton.

New Companies.

Premier Anti-Fouling Paint Co., Ltd.—CAPITAL £3,000. in £1. shares. This company has been formed to acquire the business carried on by H. Lundy as "The Premier Anti-Fouling Paint Co." at Riversdale Works, Earlsfield, S.W., and to manufacture, sell, and deal in anti-fouling and other paints, compositions, varnishes, etc.

Town's Refuse Utilisation Syndicate (Hanson's Patents), Ltd.—CAPITAL £20,000. in £1. shares. This company has been formed to acquire the patents of J. Hanson, No. 22,458 of 1892, for a utiliser of town's refuse, and No. 16,368 of 1893, for a destructor of town's refuse, and to manufacture, sell, and deal in utilisers and destructors of town's refuse. The subscribers to the memorandum of association are:—J. H. Richardson, 67, Shepherd's Bush Green, W., architect; W. Williams, 17, Benbow-road, W., builder; H. Crosbie, 171, Uxbridge-road, W., grocer; A. Prole, 73, Uxbridge-road, W., butcher; G. M. Howes, 7, Ashchurch-terrace West, civil servant; D. Smithers, 61, Frithville-gardens, Shepherd's Bush, contractor; H. King, 123, Fentiman-road S.W., gent.

Booth & Co., Ltd.—CAPITAL £75,000. in £1. shares. This company has been formed to acquire the business carried on by A. W.

and C. L. Booth, at Borstal and Caxton, Rochester, Kent, and to manufacture, sell, and deal in cement, lime, plaster of paris, whitening, bricks, tiles, pipes, stone, etc. The subscribers to the memorandum of association are:—A. W. Booth, Nashenden, Rochester, cement manufacturer; C. L. Booth, 4, Abbey-yard, St. John's Wood, cement manufacturer; T. Williams, 1, Clement's Inn, W.C., solicitor; F. H. Day, The Precinct, Rochester, solicitor; E. L. Baker, The Precinct, Rochester, solicitor; Mrs. M. B. Booth, Nashenden, Rochester; Mrs. F. Craske, Borstal, Rochester. Registered office, Borstal Court Cement Works, Rochester, Kent.

Lennox, Reynolds and Fyfe, Ltd.—CAPITAL £10,000 in £1. shares. This company has been formed to adopt certain agreements, and to carry on the business of ironfounders, engineers, tool-makers, brass-founders, metal-workers, boiler-makers, smiths, etc. The subscribers to the memorandum of association are:—R. N. Lennox, Rosebank Works, Fulham, S.W., engineer; K. L. Reynolds, Rosebank Works, Fulham, S.W., engineer; L. B. Reynolds, 46, Aldridge-road Villas, W., gent; A. E. Fyfe, 10, Cedar Gardens, Putney, S.W., engineer; Miss K. M. Reynolds, 4, Colinet-road, Putney; Mrs. J. Finch, The Nook, Rosebank, Fulham; F. E. Hollands, 29, Petley-road, Hammersmith, engineer. Registered office, Rosebank Engineering Works, Fulham, S.W.

IMPORTS OF CHEMICAL PRODUCTS AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM

LONDON.

Week ending September 4th.

Acetic Acid—																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			</
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Chemicals (otherwise undescribed)

France,	£113	Mory & Co.		Germany,	5	L. & I. D. Jt. Co.		U. States,	156	T. H. Lee		Holland,	20	Fuerst Brs.		Holland,	180	B. Ackerley & Son		Holland,	9	F. Boehm		Holland,	29	J. Knill & Co.		Holland,	25	H. Wallace & Co.		Holland,	10 cks.	Typke & King		Germany,	£15	J. Barber & Co.		U. States,	205	G. Rahn & Co.		Belgium,	430	Phillips & Graves		Belgium,	10	E. C. Bailes		Germany,	23	A. Laurence		Germany,	74	John Cockerill Line		Holland,	17	T. H. Lee		Holland,	17	Wescott & Laurence		Holland,	17	A. & M. Zimmermann		Holland,	17	Hernu, Peron & Co.		Italy,	50 cks.	Thames S. T. & L. Co., Ltd.	
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Citrate of Lime

Italy,	50 cks.	Thames S. T. & L. Co., Ltd.	
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Copper Sulphate—

U. States,	23 cks.	Williams, Torrey & Co.	
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Copperas—

Germany,	4 cks.	A. & M. Zimmermann	
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Cream of Tartar—

Holland,	24 cks.	Kirkpatrick & Co.		Italy,	19	Howard & Sons		Belgium,	8	B. & F. Wf. Co.		Italy,	64	Thames S. T. & L. Co., Ltd.	
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France,	16	F. C. Devon & Co.		U. States,	17	B. & F. Wf. Co.		Portugal,	5	W. C. Bacon & Co.		Portugal,	5	B. & F. Wf. Co.	
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Cresol—

U. States,	40 cs.	Lunham & Moore	
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Dextrine—

Germany,	50 bgs.	J. Barber & Co.		Germany,	84	M. D. Co.	
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Dyestuffs—

Holland,	1 ck. 49 pks.	Hernu, Peron & Co.	
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Extractions

Canaries,	12 bgs.	W. M. Smith & Sons		Rangoon,	200 bxs.	A. Howden & Co.		E. Indies,	51 bgs.	Flack, Chandler & Co.		Austria,	60 cks.	Boutcher, Mortimore & Co.		France,	87	Union Ltge. Co.		U. States,	50 bxs.	W. Burton & Sons		Belgium,	20 cks.	Leach & Co.		France,	30	Beresford & Co.		U. States,	200 bxs.	T. H. Lee		Denmark,	1 cs.	Skillbeck Brs.		France,	3	A. F. White & Co.		France,	36 pks.	3 Bailey & Leatham, Ltd.		France,	36 pks.	Leach & Co.	
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Glucose—

U. States,	250 pks.	250c	E. Thompson & Co.		U. States,	550	550	C. S. Lovell		U. States,	750	750	Bellamy's Wf. Co.		U. States,	200	200	Thames S. T. & L. Co.		U. States,	50	50	Tug & L. Co.		U. States,	250	250	Torrey & Co.		U. States,	250	250	L. & I. D. Jt. Co.		Germany,	20	159	Bennett S. S. Co.		France,	100	200	W. E. Cole		U. States,	200	500	G. Clark & Co.		Holland,	100	100	J. Barber & Co.	
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Farina—

Germany,	24 bgs.	J. Barber & Co.		Holland,	150	T. H. Lee		Holland,	100	J. Knill & Co.		Holland,	50	J. Knill & Co.	
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Glucose—

U. States,	250 pks.	250c	E. Thompson & Co.		U. States,	550	550	C. S. Lovell		U. States,	750	750	Bellamy's Wf. Co.		U. States,	200	200	Thames S. T. & L. Co.		U. States,	50	50	Tug & L. Co.		U. States,	250	250	Torrey & Co.		U. States,	250	250	L. & I. D. Jt. Co.		Germany,	20	159	Bennett S. S. Co.		France,	100	200	W. E. Cole		U. States,	200	500	G. Clark & Co.		Holland,	100	100	J. Barber & Co.	
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Glucose—

U. States,	250 pks.	250c	E. Thompson & Co.		U. States,	550	550	C. S. Lovell		U. States,	750	750	Bellamy's Wf. Co.		U. States,	200	200	Thames S. T. & L. Co.		U. States,	50	50	Tug & L. Co.		U. States,	250	250	Torrey & Co.		U. States,	250	250	L. & I. D. Jt. Co.		Germany,	20	159	Bennett S. S. Co.		France,	100	200	W. E. Cole		U. States,	200	500	G. Clark & Co.		Holland,	100	100	J. Barber & Co.	
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Glucose—

U. States,	250 pks.	250c	E. Thompson & Co.		U. States,	550	550	C. S. Lovell		U. States,	750	750	Bellamy's Wf. Co.		U. States,	200	200	Thames S. T. & L. Co.		U. States,	50	50	Tug & L. Co.		U. States,	250	250	Torrey & Co.		U. States,	250	250	L. & I. D. Jt. Co.		Germany,	20	159	Bennett S. S. Co.		France,	100	200	W. E. Cole		U. States,	200	500	G. Clark & Co.		Holland,	100	100	J. Barber & Co.	
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Glucose—

U. States,	250 pks.	250c	E. Thompson & Co.		U. States,	550	550	C. S. Lovell		U. States,	750	750	Bellamy's Wf. Co.		U. States,	200	200	Thames S. T. & L. Co.		U. States,	50	50	Tug & L. Co.		U. States,	250	250	Torrey & Co.		U. States,	250	250	L. & I. D. Jt. Co.		Germany,	20	159	Bennett S. S. Co.		France,	100	200	W. E. Cole		U. States,	200	500	G. Clark & Co.		Holland,	100	100	J. Barber & Co.	
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Glucose—

U. States,	250 pks.	250c	E. Thompson & Co.		U. States,	550	550	C. S. Lovell		U. States,	750	750	Bellamy's Wf. Co.		U. States,	200	200	Thames S. T. & L. Co.		U. States,	50	50	Tug & L. Co.		U. States,	250	250	Torrey & Co.		U. States,	250	250	L. & I. D. Jt. Co.		Germany,	20	159	Bennett S. S. Co.		France,	100	200	W. E. Cole		U. States,	200	500	G. Clark & Co.		Holland,	100	100	J. Barber & Co.	
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Gambler

Singapore,	84 bgs.	R. & J. Henderson	
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Indigo

E. Indies,	12 cts.	S. Figgis & Co.		E. Indies,	50	J. Owen		E. Indies,	15	L. & I. D. Jt. Co.		E. Indies,	15	Park, Macfadyen & Co.		E. Indies,	2	Croysdale & Co.		E. Indies,	152 t	W. Shelcott		E. Indies,	616 bgs.	Scriven Brs. & Co.		E. Indies,	2,000 pkts.	P. & O. Co.		E. Indies,	800 bgs.	A. B. Curtis & Co.		E. Indies,	616	Dalton & Young	
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Logwood

B. Honduras,	152 t	W. Shelcott	
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Myrabolams

E. Indies,	616 bgs.	Scriven Brs. & Co.		E. Indies,	2,000 pkts.	P. & O. Co.		E. Indies,	800 bgs.	A. B. Curtis & Co.		E. Indies,	616	Dalton & Young	
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Shumac

Italy,	2,450 bgs.	J. Kitchen		Italy,	225	T. S. Harris & Co.		Italy,	550	Bailey & Leatham, Ltd.		Italy,	150	H. Johnson & Sons		Italy,	700	J. E. Scott		Italy,	800	Bereford & Co.		Italy,	500	C. S. Lovell		Italy,	500	J. Graves	
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Tanners' Bark

Melbourne,	75 t.	Brown & Elmslie		Natal,	59 1/2	A. & W. Nesbitt		Natal,	61	Boutcher, Mortimore & Co.		N. Zealand,	6	Von der Meden & Co.		Natal,	23	Flack, Chandler & Co.		Natal,	30	J. T. Kennie, Son & Co.		Belgium,	26	T. & H. Wilks		Natal,	8	Goad, Rigg & Co.		U. States,	246 bgs.	L. & I. D. Jt. Co.		U. States,	252 t.	Boutcher, Mortimore & Co.		U. States,	25	Deering & Robottom		U. States,	150	A. & W. Nesbitt		U. States,	12 1/2	F. Clayton & Co.		U. States,	10	Page, Son & Co.	
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Farina—

Germany,	24 bgs.	J. Barber & Co.		Holland,	150	T. H. Lee		Holland,	100	J. Knill & Co.		Holland,	50	J. Knill & Co.	
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Glucose—

U. States,	250 pks.	250c	E. Thompson & Co.		U. States,	550	550	C. S. Lovell		U. States,	750	750	Bellamy's Wf. Co.		U. States,	200	200	Thames S. T. & L. Co.		U. States,	50	50	Tug & L. Co.		U. States,	250	250	Torrey & Co.		U. States,	250	250	L. & I. D. Jt. Co.		Germany,	20	159	Bennett S. S. Co.		France,	100	200	W. E. Cole		U. States,	200	500	G. Clark & Co.		Holland,	100	100	J. Barber & Co.	
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Glucose—

U. States,	250 pks.	250c	E. Thompson & Co.		U. States,	550	550	C. S. Lovell		U. States,	750	750	Bellamy's Wf. Co.		U. States,	200	200	Thames S. T. & L. Co.		U. States,	50	50	Tug & L. Co.		U. States,	250	250	Torrey & Co.		U. States,	250	250	L. & I. D. Jt. Co.		Germany,	20	159	Bennett S. S. Co.		France,	100	200	W. E. Cole		U. States,	200	500	G. Clark & Co.		Holland,	100	100	J. Barber & Co.	
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Glucose—

U. States,	250 pks.	250c	E. Thompson & Co.		U. States,	550	550	C. S. Lovell		U. States,	750	750	Bellamy's Wf. Co.		U. States,	200	200	Thames S. T. & L. Co.		U. States,	50	50	Tug & L. Co.		U. States,	250	250	Torrey & Co.		U. States,	250	250	L. & I. D. Jt. Co.		Germany,	20	159	Bennett S. S. Co.		France,	100	200	W. E. Cole		U. States,	200	500	G. Clark & Co.		Holland,	100	100	J. Barber & Co.	
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Glucose—

U. States,	250 pks.	250c	E. Thompson & Co.		U. States,	550	550	C. S. Lovell		U. States,	750	750	Bellamy's Wf. Co.		U. States,	200	200	Thames S. T. & L. Co.		U. States,	50	50	Tug & L. Co.		U. States,	250	250	Torrey & Co.		U. States,	250	250
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Plumbago—
Italy, 100 bgs. B. Galloway
Ceylon, 350 cks. J. Thredder, Son,
& Co.
" 99 G. R. Haller

Potassium bicarbonate—
Holland, 7 cks. A. & M. Zimmermann

Potassium Carbonate—
Germany, 41 c. M. D. Co.
France, 50 J. A. Feid
Germany, 320 Petri Bros.

Potassium Chloride—
Holland, 14 cks. H. Johnson & Sons

Potassium Oxymuriate—
Sweden, 120 kgs. M. D. Co.

Potassium Permanganate—
Holland, 25 cks. Philipps & Graves
" 23 kgs. J. M. Steel & Co.

Quicksilver—
Belgium, 2:00 bils. L. & I. D. Jt. Co.

Rosin—
Italy, 6 bils. C. S. Lovell
France, 13 F. & S. Chiesman
& Co.
U. States, 100 T. Nickels & Co.
866 Moore & Hole

Rosin Oil—
France, 200 bils. Fleming's Oil & Chemical Co.

Saltpetre—
E. Indies, 2,074 bgs. Henderson Bros.
Germany, 13 cks. L. & I. D. Jt. Co.
" 28 50 kgs. P. Hecker
& Co.
E. Indies, 599 bgs. Lucas & Spencer's Wf.

Soda—
Belgium, 1,200 c. J. W. Barker
Holland, 140 R. W. Greeff & Co.

Sodium Prussiate—
Belgium, 17 cks. Blagden, Waugh,
& Co.

Starch—
U. States, 100 bils. C. Tennant, Sons,
& Co.
Belgium, 200 T. H. Lee
France, 200 P. prs. Dowgate Dk.
Holland, 200 R. Lehmann
114 Little & Johnston
Belgium, 40 Philipps & Graves
" 30 Sawyer, Sons, & Co.
" 724 Leach & Co.
U. States, 4,000 bgs. F. Claydon & Co.
Holland, 80 cks. J. Forsey
" 1,200 Carey & Sons
France, 90 Volkins & Co.
Belgium, 180 W. E. Cole
" 180 J. Barber & Co.
" 180 Seaward Bros.

Stearine—
Holland, 317 bgs. Palmer & Co.
Belgium, 188 H. Hill & Sons
France, 120 " "

Sulphur—
Italy, 7 t. J. Puddy & Co.
" 100 Soundy & Sons
" 200 R. Greening
" 41 G. Boor & Co.
" 300 Brandram Bros. & Co.
" 22 W. C. Bacon & Co.
" 8 J. Kitchen Ltd.
" 100 Johnson & Hooper
" 100 A. Hunter & Co.
" 500 Fuerst Bros.
" 50 Brit. Ultramarine Manufacturing Co.

Sulphurous Acid—
Holland, 10 pks. H. Lorenz

Talc—
France, 640 Blackwell & Co.

Tar—
N. Russia, 475 cks. Union Whys. Co.
" 2,302 Linck
" 2,687 bils. Moeller & Co.
" 270 W. H. Hindley & Co.
" 50 H. Johnson & Sons
" 50 L. & N.-W. Rly.
" 39 Elkan & Co.
" 1,921 W. E. Malcolm & Co.

Tartaric Acid—
Austria, 48 pks. B. & F. Wf. Co.
Holland, 27 Kirkpatrick & Co.
Italy, 40 B. & F. Wf. Co.
Holland, 5 F. C. Devon & Co.
" 13 B. & F. Wf. Co.

Ultramarine—
Holland, 3 cks. Philipps & Graves
Germany, 20 Steinhoff, Sons, & Co.
Holland, 30 pks. Thames S. T. & L. Co., Ltd.

Varnish—
U. States, 26 pks. Taylor Bros.
Germany, 36 T. H. Lee
U. States, 5 O'Hara, Matthews,
& Co.
France, 4 Mory & Co.
U. States, 24 Lunham & Moore

White Lead—
Germany, 19 cks. N. J. Feiner & Co.
France, 18 J. Watt & Son
Holland, 20 Blundell, Spence, & Co.
Belgium, 19 16 bils. J. L. Avon
& Co.

Holland, 39 W. Balchin, Ld.
Belgium, 40 W. A. Hampton
Germany, 19 W. A. Rose & Co.
" 37 Taylor Bros.
Belgium, 34 Perkins & Homer
Austria, 24 cks. M. D. Co.
" 10 cks. Grosscurth & Lubolt

Wood Pulp—
Sweden, 60 pks. Henderson, Craig,
& Co.
Norway, 40 W. G. Taylor & Co.
Germany, 1,178 E. J. & W. Goldsmith
" 2,000 Tough & Henderson
Sweden, 203 J. Spicer & Sons
Norway, 600 W. E. Bott & Co.
" 20 W. D. Cook
" 60 Christophersen,
Andrews, & Co.
Portugal, 500 W. G. Taylor & Co.
" 700 E. J. & W. Goldsmith
Sweden, 100 Alsing & Co.
Holland, 250 J. Owen
Belgium, 181 E. J. & W. Goldsmith

Zinc Oxide—
Holland, 410 cks. Soundy & Sons
" 100 bils. M. Ashby, Ld.
Germany, 3 cks. L. & I. D. Jt. Co.
Holland, 25 J. Matton
Germany, 11 R. W. Greeff & Co.

LIVERPOOL.
Week ending September 2nd.

Acetate of Lime—
New York, 964 bgs.

Albumen—
Alexandretta, 6 cks.
Hamburg, 2 cks.

Aniline Salts—
Rotterdam, 14 bils.

Arsenic—
Antwerp, 61 bils.

Barium Sulphate—
Genoa, 500 bgs.

Barytes—
Antwerp, 48 cks. 70 bgs.
Rotterdam, 23

Benzine—
Philadelphia, 1,500 bils.

Bone Ash—
Campana, qty.
B. Ayres, 587 bgs. W. B. Dickinson

Boric Acid—
Leghorn, 30 cks.

Castor Oil—
Leghorn, 15 cks.

Chemicals (otherwise unrescrib.)
Antwerp, 8 cks. J. T. Fletcher & Co.

Hamburg, 2 cks.
Messina, 4 cks.
Bordeaux, 10

Cottonseed Oil—
New York, 35 bils.

Cream of Tartar—
Barcelona, 5 tts. Sachse & Klemm

Tarragona, 8
" 1 pp.

Dyestuffs—
Argois
Leghorn, 1 ck.

Rangoon, 460 bxs.
Shumac
Palermo, 600 bgs. 25 bils.

Glucose—
New York, 200 bils.

Glue—
Rouen, 20 bils. R. J. Francis & Co.
" 35 cks.
Rotterdam, 11 10 bgs. 2 bils.

Lamp Black—
Philadelphia, 35 bils.

Limestone—
Antwerp, 1 crt. J. T. Fletcher & Co.

Manganese Ore—
Bordeaux, qty.

Mineral White—
Genoa, 100 bgs.

Naphtha—
Philadelphia, 5,400 bils.

Ochre—
Rouen, 33 cks. R. J. Francis & Co.

San Francisco, 26 bgs.

Paraffin Scale—
New York, 60 bils. Thompson & Bedford
Philadelphia, 875 Anglo-Am. Oil Co. Ld.

New York, 500
Philadelphia, 975

Phosphate—
Putta Gorda, 1,316 t.

Phosphate Rock—
Terneuzen, 330 t.

Potash—
Rouen, 99 cks.
Antwerp, 21 dms.
Hamburg, 80 cks.

Pumice Stone—
Messina, 2 cks. 10 bils.

Pyrites—
Huelva, 2,841 t. Matheson & Co.

Salt—
N. Orleans, 250 sks. J. S. Hannon

Saltpetre—
Hamburg, 6 cks.

Soap—
N. port News, 1,439 bils.
New York, qty. Colgate & Co.
N. Orleans, 2,380 bils.

Soapstone—
Bordeaux, 101 bgs. Geo. G. Blackwell, Sons & Co.

Sodium Acetate—
Rouen, 15 cks.

Sodium Nitrate—
Iquique, 2,323 t.

Sodium Prussiate—
Antwerp, 18 cks.

Starch—
Antwerp, 897 cks. J. T. Fletcher & Co.

" 245
Baltimore, 600 sks.
Amsterdam, 45 bxs.
Rotterdam, 190 cks. 9 pks.

Stearine—
Rouen, 1,300 bgs.
Antwerp, 13 J. T. Fletcher & Co.

Sulphur—
Catania, 100 bgs.

Talc—
Barce ona, 500 sks.

Tallow—
New York, 184 tcs.
Baltimore, 100 bils. Colby & Co.
B. Ayres, 570 cks.

Treacle—
Bordeaux, 1 ck.

Ultramarine—
Rotterdam, 17 cks.
Hamburg, 6 cks.

Varnish—
New York, 15 bils. W. A. Warren

Verdigris—
Bordeaux, 1 ck.

Waste Salt—
Hamburg, 140 cks. & qty. H. Tyrer & Co.

" 2,040 bgs.

White Lead—
Dunkirk, 12 cks.
Rotterdam, 68 J. T. Fletcher & Co.
Antwerp, 27

Wood Pulp—
Gothenburg, 42 pks. G. Schenkenwald & Co.
Boston, 159 crts. Lever Bros.
Hamburg, 333 bils.
" 60

Zinc Oxide—
Antwerp, 107 bils.

Zinc White—
Rotterdam, 22 cks.

MANCHESTER.

Week ending September 4th.

Acetate of Lime—
New York, 2,634 bgs.

Acetic Acid—
Rotterdam, 29 bils.

Albumen—
Hamburg, 6 cks.
Latakia, 2 cks.

Alizarine—
Rotterdam, 12 cks.

Aluminous Cake—
Rotterdam, 110 cks.

Ammonia—
Rotterdam, 8 cyldrs. 5 dms.

Aniline Colours—
Rouen, 2 cks.

Antimony Oxalate—
Rotterdam, 4 cks.

Barytes—
Antwerp, 100 bgs. J. T. Fletcher & Co.

Beta-Naphthol—
Rotterdam, 1 ck.

Chemicals (otherwise undes.)—
Hamburg, 2 pks.
Rotterdam, 6 cks.

Colours—
Hamburg, 22 cks. 12 cks.
Rotterdam, 103 50

Farina—
Stettin, 50 bgs. Stott, Coker & Co.

Glue—
Rotterdam, 100 bgs.
Boulogne, 3 cks.

Lead Acetate—
Hamburg, 24 cks.

Limestone—
Antwerp, 5 crts.

Litharge—
Rotterdam, 7 cks.

Lithopone—
Hamburg, 40 cks.

Paraffin Seal—
New York, 300 bils.

Pitch—
Antwerp, 75 bils.

Potash—
Hamburg, 20 cks.
Rouen, 5

Potassium Carbonate—
Stettin, 39 cks. Stott, Coker, & Co.

Potassium Chlorate—
Gothenburg, 12 cks. 20 kgs.

Potassium Sulphate—
Rotterdam, 150 cks.

Pyrites—
Huelva, 1,392 t. Stott, Coker, & Co.

Salt—
Rotterdam, 50 bgs.

Sodium—
Hamburg, 2 cks.

Sodium Nitrate—
Rotterdam, 27 cks.

Starch—
Hamburg, 200 cks.
New York, 1,150 bgs.
Antwerp, 252
Rotterdam, 10

Stearine—
Rotterdam, 20 bils.

Tallow—
New York, 40 tcs. 50 bds.

Tartar—
Hamburg, 5 cks.

Tartaric Acid—
Rotterdam, 29 cks. 10 kgs.

Tin Oxide—
Rotterdam, 10 cks.

Wood Pulp—
Hamburg, 218 bils.
Gothenburg, 6,484

Zinc Ashes—
Antwerp, 3 cks.

Zinc Oxide—
Rotterdam, 25 cks.

Zinc White—
Rotterdam, 20 cks.

HULL.

Week ending September 4th.

Acetic Acid — Antwerp, 4 crbys.	
Alumina — Rotterdam, 16 cks.	W. & C. L. Ringrose
Arsenic — Hamburg, 9 cs.	Wilson, Sons, & Co., Ltd.
Barytes — Antwerp, 18 cks.	Bailey & Leatham, Ltd.
" 90 100 bgs.	
" 23 100 bgs.	
" 21 Hutchinson & Son	
" 24 W. & C. L. Ringrose	
Chemicals (otherwise undescr'd) Rotterdam, 1 ck. Hutch. son & Son	
" Antwerp, 500 pks.	Wilson, Sons, & Co., Ltd.
Cod Oil — Aalesund, 410 brls.	Wilson, Sons, & Co., Ltd.
Colours — Danzig, 10 cks.	Wilson, Sons, & Co., Ltd.
" Antwerp, 4	Bailey & Leatham, Ltd.
" Bremen, 4	Veltmann & Co.
" Steitin, 14	Wilson, Sons, & Co., Ltd.
" Rotterdam, 124 pks.	W. & C. L. Ringrose
" 6 Hutchinson & Son	
" Antwerp, 3 cks.	Wilson, Sons, & Co., Ltd.
Cottonseed Oil — New York, 750 brls.	Wilson, Sons, & Co., Ltd.
Cryolite — Copenhagen, 5 cks.	Wilson, Sons, & Co., Ltd.
Dyestuffs — Alizarine Rotterdam, 17 cks.	W. & C. L. Ringrose
" 5 brls.	
Argols Bordeaux, 65 cks.	Wilson, Sons, & Co., Ltd.
" 80 18 cs.	
Indigo Hamburg, 3 cks.	Wilson, Sons, & Co., Ltd.
Madder Rotterdam, 3 cks.	W. & C. L. Ringrose
Valonia Dikili, 568 t.	
Farina — Haringen, 100 bgs.	W. & C. L. Ringrose
" Stettin, 200	Wilson, Sons, & Co., Ltd.
Glucose — New York, 100 brls.	Wilson, Sons, & Co., Ltd.
" Amsterdam, 300	Hutchinson & Son
" 50 bgs.	
Glue — Rouen, 4 cks.	Rawson & Robinson
" Philadelphia, 8 brls.	Anglo-American Oil Co.
Lead Acetate — Hamburg, 1 ck.	Wilson, Sons, & Co., Ltd.
Minium — Rotterdam, 15 cks.	Hutchinson & Son
Ochre — Rotterdam, 3 cs.	Hutchinson & Son
Paint — Philadelphia, 45 brls.	Anglo-American Oil Co.
Phosphate — Dunkirk, 140 t.	
Phosphorus — Rotterdam, 1 bx.	W. & C. L. Ringrose
Pitch — Rotterdam, 10 cks.	Hutchinson & Son
" Antwerp, 12	Wilson, Sons, & Co., Ltd.
Potash — Dunkirk, 4 cks.	
Saltpetre — Hamburg, 21 cks.	Wilson, Sons, & Co., Ltd.
" Antwerp, 135 bgs.	

Soap — St. Petersburg, 1 cs.	Wilson, Sons, & Co., Ltd.
Soda — Hamburg, 78 bgs.	Wilson, Sons, & Co., Ltd.
" Antwerp, 120	Bailey & Leatham, Ltd.
Starch — Ghent, 324 cs.	Wilson, Sons, & Co., Ltd.
" Rotterdam, 76	Jarman & Flint
" Bremen, 2,576	Veltmann & Co.
" Amsterdam, 120	W. & C. L. Ringrose
" Ghent, 201	Hutchinson & Son
" Antwerp, 160	Wilson, Sons, & Co., Ltd.
Tallow — Dunkirk, 204 cs.	Wilson, Sons, & Co., Ltd.
Tar — Uleaborg, 1,550 brls.	J. M. Hamilton & Co.
" 500 hf.-brls.	
Tartar — Bordeaux, 5 cks.	Rawson & Robinson
Tartaric Acid — Rotterdam, 10 cks.	Hutchinson & Son
" 1 W. & C. L. Ringrose	
Treacle — New York, 1,078 brls.	Wilson, Sons, & Co., Ltd.
" Hamburg, 5 cks.	Bailey & Leatham, Ltd.
Ultramarine — Rotterdam, 10 cs.	Hutchinson & Son
White Lead — Amsterdam, 21 cks.	Hutchinson & Son
" Antwerp, 20	Bailey & Leatham, Ltd.
" Dunkirk, 11	Wilson, Sons, & Co., Ltd.
Wood Pulp — Gothenburg, 191 brls.	Wilson, Sons, & Co., Ltd.
" 300	
" Hamburg, 80	
" Christiania, 480	18 cs.
" Drontheim, 1,183	
" Helsingfors, 342	J. Good & Sons
" Ghent, 28 pks.	Hutchinson & Son
Zinc Oxide — Rotterdam, 5 cks.	Hutchinson & Son
" Antwerp, 7	Bailey & Leatham, Ltd.
Zinc White — Rotterdam, 20 cks.	Hutchinson & Son

GLASGOW.

Week ending September 4th.

Alkali — Rotterdam, 20 cks.	
Asbestos — Genoa, 12 cs. 24 pks. 8 bls.	
Barium Sulphate — Antwerp, 550 bgs.	
Barytes — Hamburg, 2 cks.	
" Rotterdam, 46	J. Rankine & Son
Bone Meal — Iceland, 663 sks.	
Citric Acid — Messina, 8 cks.	
Colours — Hamburg, 2 cks.	
" Rotterdam, 98 pks.	J. Rankine & Son
Cottonseed Oil — New York, 250 brls.	
Cream of Tartar — Tarragona, 5 pipes	
Dyestuffs — Alizarine Rotterdam, 137 cks.	J. Rankine & Son
" 17 brls.	
Aniline Rotterdam, 6 bxs.	J. Rankine & Son
" 3 brls.	
Argols Bordeaux, 47 cks.	

Cutch Rangoon, 860 pks.	P. Henderson & Co.
Shumac Palermo, 119 bls.	950 bgs.
Lamp Black — New York, 20 brls.	
Mineral White — Genoa, 150 bgs.	
Paraffin Wax — Rangoon, 244 bgs.	P. Henderson & Co.
Plumbago — Genoa, 300 bgs.	
Potassium Nitrate — Hamburg, 56 cks.	
Pumice Stone — Messina, 18 cks.	20 cs. 1 brl.
Rosin — New York, 750 brls.	
Soap — Rotterdam, 5 cs.	J. Rankine & Son
" Hamburg, 1 cs.	
Sodium Nitrate — Taltal, 1,420 t.	Thomson, Aikman & Co.
Starch — New York, 3,125 bgs.	
" Antwerp, 160 cs.	10 bgs.
Stearine — Rotterdam, 18 cks.	J. Rankine & Son
Tallow — Philadelphia, 75 tcs.	
" New York, 125	
Tartaric Acid — Rotterdam, 3 cks.	J. Rankine & Son
" Antwerp, 8 cks.	
Treacle — Philadelphia, 500 brls.	Waddall & Bryson
" 150	
Ultramarine — Rotterdam, 2 cks.	J. Rankine & Son
Varnish — Antwerp, 3 cks.	
Waste Salt — Hamburg, 150 t. 1,06 bgs.	
White Lead — Rotterdam, 64 pks.	J. Rankine & Son
Wood Pulp — Montreal, 1,785 bndls.	
" Hamburg, 48 rolls	
" Christiania, 25 cs.	2,495 bls.
Zinc Oxide — New York, 100 brls.	
Zinc White — Rotterdam, 45 cks.	J. Rankine & Son
" 11 pks.	

TYNE.

Week ending September 4th.

Alum Earth — Hamburg, 38 cks.	Tyne S. S. Co.
Antimony Ore — Antwerp, 3,751 bgs.	Tyne S. S. Co.
Asbestos — Rotterdam, 4 bls.	Tyne S. S. Co.
Barytes — Antwerp, 400 bgs.	Tyne S. S. Co.
Bleaching Powder — Rotterdam, 113 cks.	Tyne S. S. Co.
" Hamburg, 112	
Castor Oil — Antwerp, 28 brls.	Tyne S. S. Co.
Colours — Hamburg, 3 cs.	Tyne S. S. Co.
" 1	
Farina — Hamburg, 50 bgs.	Tyne S. S. Co.
Limestone — Antwerp, 5 crts.	Tyne S. S. Co.
" 1 cs.	
Phosphate — Bougie, 1,030 t.	Langdale's Chemical M. Co.
" Antwerp, 710	
" 240 bgs.	Tyne S. S. Co.
Phosphate of Lime — Dunkirk, 442 t.	
Salt — Hamburg, 220 t.	A. J. Brown & Co.

Soap — Rotterdam, 102 cs.	Tyne S. S. Co.
Starch — Antwerp, 20 cs.	Tyne S. S. Co.
" Rotterdam, 80	
White Lead — Antwerp, 12 cks.	Tyne S. S. Co.
" Rotterdam, 2	
Zinc Oxide — Antwerp, 23 brls.	Tyne S. S. Co.
Zinc Sulphate — Gothenburg, 55 bgs.	

GOOLE.

Week ending September 18th.

Alizarine — Rotterdam, 174 cks.	5 cs.
Alkali — Calais, 13 cks.	
Aniline — Hamburg, 10 cks.	
" Rotterdam, 212	73 cs.
Antimony — Boulogne, 2 cks.	
Colours — Hamburg, 4 cks.	
Dyestuffs (otherwise undescr'd) Boulogne, 5 cks.	5 cs. 37 pks.
Farina — Hamburg, 300 bgs.	
" Delfsdyhl, 625	
" Haringen, 20	
Glucose — Calais, 100 bgs.	
Indigo — Rotterdam, 4 cks.	1 cs.
Logwood — Belize, 542 t.	
" Hayti, 560	
Paint — Hamburg, 4 cs.	
Potash — Hamburg, 9 cks.	
" Dunkirk, 45	
" Calais, 52 dms.	
Pyrites — Drontheim, 520 t.	
Saltpetre — Rotterdam, 100 bgs.	
" Hamburg, 13 cks.	20 kgs.
Soap — Rotterdam, 1 cs.	
Soda — Hamburg, 2 cks.	
Starch — Rotterdam, 20 cs.	
Stearine — Antwerp, 10 bgs.	
Tartar — Rotterdam, 4 cks.	
Ultramarine — Rotterdam, 2 cks.	
Varnish — Hamburg, 1 ck.	
Waste Salt — Hamburg, 330 cks.	500 bgs.
Wood Pulp — Hamburg, 120 bls.	
" Antwerp, 1,382	
Barytes — Rotterdam, 134 bgs.	
Caoutchouc — Rotterdam, 2 cs.	
" Hamburg, 14	1 cs.
" Antwerp, 2 cks.	
Chemicals (otherwise undescr'd) Antwerp, 2 cs.	
" Rotterdam, 39 crbys.	
Coal Tar Dyes — Antwerp, 26 pks.	
Colours — Antwerp, 14 cks.	38 cs.
" Hamburg, 72	18
Dyestuffs (otherwise undescr'd) Dieppe, 10 cks.	
Farina — Hamburg, 200 bgs.	
Starch — Antwerp, 287 cs.	

EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending September 8th.

Acid—		
Hydrochloric, 1 cs.	£10	
Sulphuric, 19 c.	£21	
Nitric (Liquid)—		
14 dms.	£67	
14 cks.	67	
Sodium Carbonate—		
Elizabeth, 6 c.	£11	
5 t. 7	130	
20 cs.	23	
Town, 10	16	
Sodium Chloride—		
and, 1 t. 6 c.	£9	
1 4	38	
Sodium Sulphate—		
Burg, 250 t.	£1,880	
rt, 9 t. 19 c.	697	
rk, 19 15	145	
m, 100	775	
—		
12 t. 15 c.	£303	
3	70	
ing Powder—		
orne, 120 dms.	£66	
Bay, 2 t.	24	
ic Acid—		
ne, 10 c.	£13	
—		
Town, 18 c.	£14	
tal, 4 t. 9	33	
gen, 7	17	
1	18	
dam, 10 cks.	27	
3	45	
ic Acid—		
ama, 12	£16	
elphia, 50 dms.	166	
95 cks.	40	
ic Acid Gas—		
88 tubes	£33	
ux, 19	50	
ic Soda—		
arne, 15 c.	£23	
1 t. 9	26	
Town, 6	6	
nd, 3	29	
7	17	
gton, 2 15	40	
Bay, 8 18	136	
als (otherwise undescribed)		
1 cs.	£13	
3 kgs.	14	
5	149	
W.A., 20 104 pks.	39	
12 c.	21	
5 cks. 10 kgs.	31	
10	20	
3 t. 11 c.	27	
8 pks.	29	
dorf, 2	25	
ne, 13 5 cs.	26	
ara, 2	6	
arne, 8 10 cks.	110	
tal, 1 9	33	
1 cs.	14	
rp, 10 kgs.	62	
rdam, 6 1 ck.	72	
gton, 15 cs.	49	
nd, 20 1	137	
Acid—		
4 c.	£27	
3 kgs.	19	
Bay, 4	21	
15	96	
1 cs.	7	
nd, 2	13	
ama, 15	94	
rdam, 3	20	
gton, 3	20	
ne, 1	7	
dam, 1	7	
Products—		
ine		
3 cs.	£14	
racene		
516 cks.	£2,209	
sine		
32 dms.	£20	
sol		
50 cks.	£337	
8 dms.	140	

Rotterdam, 2 puns. 49 b. k.	250	
Creosote		
St. Malo, 22,916 galls.	£119	
Helsingfors, 42 cks.	27	
Hordeaux, 1,200	765	
Newport News, 400	344	
Naphthaline Salts		
Hamburg, 1,760 b. s.	£456	
Pitch		
Varna, 40 brls.	£12	
New York, 3,350 bgs.	489	
Alexandria, 450	178	
Helsingfors, 280 t.	200	
Calcutta, 72	31	
Philadelphia, 950	90	
Pyridine		
Antwerp, 12 cks.	£150	
Tar		
Dunkirk, 30 brls.	£34	
Newfairwater, 150	80	
Helsingfors, 1,110 cks.	580	
Calcutta, 200	95	
Singapore, 50	40	
Tar Oil		
Marseilles, 4 cks.	£25	
Toluol		
Rotterdam, 50 cks.	£175	
Copper Sulphate		
Paris, 23 t. 14 c.	£360	
Cream of Tartar		
Durban, 6 c.	£73	
Sydney, 3 t.	217	
Wellington, 10	41	
Auckland, 1	88	
Napier, 6	25	
Cyanide Cake		
Antwerp, 5 t.	£33	
Disinfectants—		
Marseilles, 20 cks.	£15	
Barbadoes, 4	28	
Antigua, 2	14	
Melbourne, 20 cs.	37	
Algoa Bay, 40	18	
Calcutta, 2	13	
Natal, 31 pks.	48	
Hong Kong, 10	27	
Sydney, 20	17	
Hamburg, 69	17	
Auckland, 4	14	
Colombo, 66 dms. 2	28	
Gold Chloride—		
Dunedin, 1 cs.	£22	
Algoa Bay, 1	33	
Magnesite—		
Riga, 20 t.	£70	
Manure—		
Jersey, 170 t.	£715	
Lytelton, 51	175	
Las Palmas, 15 7 c.	100	
Melbourne, 3	34	
Demerara, 600 bgs.	485	
N. Orleans, 50	340	
Mauritius, 1	30	
Bordeaux, 29 18	81	
Treport, 9 17	65	
Oxalic Acid—		
B. Ayres, 2 cks.	£19	
Melbourne, 1 t. 1 c.	35	
Hio, 1	34	
Phosphorus—		
B. Ayres, 5 c.	£54	
Potash—		
Brussels, 1 cs.	£23	
Algiers, 1 t. 1 c.	10	
Stettin, 1 t. 10	30	
Potash Salts—		
Auckland, 9 t. 4 c.	£650	
Potassium Bicarbonate—		
Yokohama, 10 c.	£14	
Potassium Bichromate—		
Santos, 1 t.	£51	
Bombay, 1	44	
Potassium Chlorate—		
Montreal, 1 t.	£34	
B. Ayres, 1	34	
Potassium Cyanide—		
Rio de Janeiro, 1 t. 17 c.	£224	
New York, 40 cs.	145	
Baltimore, 10	59	
Melbourne, 3 10	504	
Delagoa Bay, 13 7	800	
Sheep Dip—		
Natal, 5 t. 10 c.	£339	
Lytelton, 15 100 dms.	38	
San Francisco, 100	75	
Algoa Bay, 4,793	1,000	

Soda—

Invercargill, 5 t.	£63	
Rotterdam, 5 8 c.	31	
Sodium Aluminate—		
B. Ayres, 2 c.	£6	
Sodium Bicarbonate—		
Malta, 1 t.	£10	
Algoa Bay, 2 4 c.	16	
Sodium Sulphate—		
Carlstadt, 280 t. 10 c.	£350	
Sodium Tartrate—		
Montreal, 12 c.	£34	
Sulphur—		
Algoa Bay, 4 t. 9 c.	£36	
Antwerp, 10 1	53	
Demerara, 20 brls.	21	
Sulphuric Acid—		
E. London, 26 t. 5 c.	£66	
Durban, 1 5	11	
Algoa Bay, 4 10	59	
Tartaric Acid—		
B. Ayres, 8 cks.	£287	
Algoa Bay, 7 c.	44	
Wellington, 3	17	
Cape Town, 12	70	
Napier, 3	20	
Yokohama, 4	52	

LIVERPOOL.

Week ending September 8th.

Acetic Acid—		
Barcelona, 1 t. 12 c.	£3	
Lisbon, 2 19 2 q.	26	
Malaga, 2	48	
Acids—		
Lagos, 1 cs.	£6	
Alum—		
Lisbon, 4 t. 18 c.	£25	
Ancona, 3 9	17	
Montreal, 2 3 2 q.	12	
Piræus, 2 15	13	
Sydney, 13 16 1	90	
Bombay, 5	25	
Tripoli, 2	10	
Jaffa, 2 5	10	
Syria, 3 1	15	
Calcutta, 14 8 2	75	
Callao, 3 10 2	16	
Patras, 1 8 2	7	
Ibrail, 7 5 1	36	
Galatz, 10 7 3	51	
M. Video, 1 4 3	6	
Metelin, 1 2	5	
San Francisco, 20 5	89	
Cape Town, 1 12 2	6	
Smyrna, 6 16	37	
Alumina Sulphate—		
Montreal, 27 t. 2 c.	£115	
Aluminoferrie—		
M. Video, 20 t. 3 c.	£56	
Ammonium Carbonate—		
Adelaide, 4 c.	£8	
Danzig, 18	26	
Copenhagen, 1 t. 4	30	
Amsterdam, 5	7	
Ammonium Chloride—		
Piræus, 1 t. 5 c.	£8	
Melbourne, 1 t.	15	
Kurrachee, 15	24	
Genoa, 3	107	
Ammonium Sulphate—		
Sourabaya, 240 t.	£2,050	
Barcelona, 25 9 c.	209	
Honolulu, 147 5 3 q. 1,143		
Lisbon, 9 16	38	
Palermo, 5 3	995	
Norfolk, Va., 127 5	396	
Philadelphia, 51 3 2	118	
Barcelona, 15 7 3	76	
Las Palmas, 10 7 3	910	
Demerara, 113 10 2	320	
La Pallice, 39 9 1	100	
Nantes, 15	39	
Gd. Canary, 5	150	
Rouen, 25	90	
Genoa, 10	135	
Valencia, 15		
Bleaching Powder—		
Bombay, 70 cks.		
Boston, 398		
B. Ayres, 2	130 cs.	
Calcutta, 2	40 bxs.	
Cape Town, 18		
Dunkirk, 22		
Genoa, 14	80 brls.	
Libau, 14		

Melbourne, 25		
Montreal, 154		
Nantes, 30		
Newport News, 301		
New York, 570		
Norfolk, 250		
Philadelphia, 53		
Pt. Natal, 25 dms.		
Boracic Acid—		
Montreal, 1 t. 18 c. 1 q.	£51	
Antwerp, 1 5	31	
Yokohama, 2	50	
Borate of Lime—		
Antwerp, 13 c. 2 q.	£6	
Borax—		
Rotterdam, 13 t.	£265	
Hamburg, 10 9 c. 2 q.	168	
Toronto, 4 8 1	71	
Pt. Credit, 2 2	39	
Halifax, 1 1	13	
Rio de Janeiro, 1	14	
Yokohama, 2 19 3	48	
Caldera, 1 1 3	5	
B. Ayres, 2	40	
Montreal, 8 2 3	157	
Naples, 1 2 3	22	
Antwerp, 23 8	313	
Galatz, 1 10	30	
Sydney, 1 2	25	
Melbourne, 2	32	
Calcium Chloride—		
Odessa, 10 t.	£70	
New York, 10 1 c.	20	
Carbolic Acid—		
Hio, 50 cks.	£166	
Toronto, 2 c. 3 q.	153	
Hamburg, 4	16	
Leghorn, 13	55	
Sydney, 1 t. 7 1	25	
New York, 2 9 12 cks.	265	
Teneriffe, 3 q.	6	
Bombay, 2	16	
Rouen, 2 6 1	141	
Caustic—		
Boston, 30 dms.		
Fairwater, 69		
Naples, 4		
Caustic Soda—		
Adelaide, 90 dms.		
Alexandria, 12		
Amsterdam, 108		
Barcelona, 312 162 cks		
Batavia, 40		
Bilbao, 30		
Bombay, 47		
Boston, 54 brls.		
Bourgas, 3		
Brisbane, 5 cs.		
Callao, 50		
Cartagena, 10		
Ceara, 15		
Corfu, 30		
Corral, 60		
Dunkirk, 35		
E. London, 2 t. 8 c.		
Fairwater, 63 dms.		
Fiume, 52		
Galatz, 70		
Genoa, 180		
Hamburg, 20		
Hio, 150		
Hong Kong, 75		
La Guayra, 20		
Leghorn, 77		
Lisbon, 20		
Melbourne, 160		
Montreal, 25		
Nagasaki, 203		
Naples, 30		
New York, 203 100		
Odessa, 325		
Padang, 50		
Payti, 5		
Pernambuco, 195		
Pt. Elizabeth, 5 cs.		
Pt. Natal, 203		
Puerto Cabello, 16		
Rio de Janeiro, 93		
Rotterdam, 131 18 cks.		
Rouen, 33		
St. Petersburg, 55		
Samarang, 15		
Santander, 48		
Seattle, 20		
Sourabaya, 25		
Tampico, 10		
Valencia, 3		
Valparaiso, 50		
Varna, 10		
Yokohama, 92		

Chemicals (otherwise under.)—

Havre,	1 t.	2 c.	£17
Marseilles,	10		12
Hamburg,	1	14	50
Ghent,	7		10
Bombay,	13	9	83
Melbourne,	1		28
Danzig,	16		23
Galatz,	10		15
Philadelphia,	13	9	410
Antwerp,	10		15
B. Ayres,	1	17	50

China Clay—

Barcelona,	80 bgs.		
Boston,	560 cks.		
Calcutta,	1,200		

Chromium Trioxide—

Antwerp,	10 c.	£32
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Citric Acid—

Mexico City,	5 c.	£30
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Coal Products—**Aniline Coals****Aniline Salts**

Boston,	75 pks.		
New York,	35 cks.		

Creosote

Bordeaux,	250 cks.		
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Pitch

Talcahuano,	200 brls.		
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Tar

Accra,	20 brls.		
Boma,	6	10 cks.	
Philadelphia,	300		
Sierra Leone,	15		

Copper Sulphate—

Melbourne Whf.,	5 t.	£78
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M. Video,	5	2 c.	2 q.	80
Montreal,	2	8		26
Patras,	3	5	1	49
Konigsberg,	1			16
Stettin,	1	4	3	4
La Plata,	1	10		28
Madras,	1	5		19
Bombay,	5	3		81
Naples,	5		2	77
Metelin,	3	5		4
Ibrail,	3			43
Catania,	24	4	2	379

Copperas—

Vera Cruz,	5 t.	£9
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Disinfectants—

Manaos,	4 c.	£9
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Kingston, Ja.,	102 pks.	£88
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Montreal,	7	1 q.	9
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Kurrachee,	1 t.	10
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Dextrin—

Calders,	8 c.	1 q.	£6
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Guano—

Sourabaya,	60 t.	2 c.	1 q.	£250
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Lead Acetate—

Calcutta,	2 t.	£10
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Lime—

Sierra Leone,	3 t.	12 c.	£8
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Monrovia,	2	5	5
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Pt. Natal,	63	14	2 q.	194
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Magnesia—

Barcelona,	5 cs		
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Lisbon,	20	5 tcs	
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Odesa,	8,2 pks.		
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St. Nazaire,	40		
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Magnesium Sulphate—

Boston,	10 bgs		
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Rio de Janeiro,	150 kgs.		
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Mauve—

Havre,	100 t.	£550
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St. Nazaire,	100	525
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Havana,	1	30
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Oxalic Acid—

Boston,	7 t.	12 c.	£230
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B. Ayres,	16	2 q.	27
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San Francisco,	5		168
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Paint—

Acacutla,	3 kgs	1 cs.	
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Alexandria,	60		
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Cienfuegos,		1 ck.	
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Copenhagen,	25		
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Ghent,		3	
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Hamburg,	24		
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Iloilo,	500		
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Landana,		1	
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Maracaibo,	260		
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M. Video,		4 cs.	
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New York,	12		
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Old Calabar,	50 t.		
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Pernambuco,	150 kgs.		
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Piræus,		12 cks.	
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Rio de Janeiro,		28	
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Rotterdam,		23 pks	
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Shanghai,		40 dms.	
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Sierra Leone,		4 t	
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Singapore,	10		
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Painters' Colours—

Alexandria,	1 cs.	40 dms.	
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Bahia,	5	234 kgs.	30
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Bombay,	10 cks.		
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B. Ayres,	3	12	12 cs.
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Cape Town,	3	12	12 dms.
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Ceara,	2		
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Leghorn,	3		
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Lisbon,	3		
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Manaos,	80		
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Para,	162 pks.		
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Philadelphia,	132		
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Ponce,	4		
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Paraffin Wax—

Alexandria,	4 bgs.	15 cs.	
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B. Ayres,	4		
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Para,	20		
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Phosphate—

Venice,	2,274 t.	17 c.	£3,412
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Phosphorus—

B. Ayres,	12 c.	£110
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Shanghai,	1 t.	8	280
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Hiogo,	2		525
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Potassium Bicarbonate—

B. Ayres,	14 c.	1 q.	£33
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Potassium Bichromate—

New York,	4 c.	£9
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Tampico,	1 t.	18	1 q.	80
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Potassium Chlorate—

Hamburg,	1 t.	10 c.	£45
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Fairwater,	1	10	48
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Rotterdam,	1	15	63
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Antwerp,	1	10	18
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Pernambuco,	1	5	44
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Lisbon,	1	5	8
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Hiogo,	5		150
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Gothenburg,	1	13	59
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Potassium Prussiate—

B. Ayres,	5 c.	1 q.	£13
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Vera Cruz,	1 t.	2	14
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Salt—

Algoa Bay,	7 t.	18 c.	
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Ambrizette,	560		
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Antwerp,			
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Baltimore,			
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Banana,	50		1,000 sks.
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Belize,	9		
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Boston,	300		
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Brisbane,	540	18	
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B. Ayres,	16	17	250 pks.
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Calcutta,	4,364		
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Camerons,	2,300 bgs.		
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Cape Labou,	4 t.		
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Demerara,	210		
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Fuca,	20		
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Ghent,	175		
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Gibraltar,	1		
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Galveston,	200		
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Guayaquil,	5		
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Halifax,			2,422 sks.
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Hamburg,			1,200
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Iquitos,			500
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Manaos,	200 bgs.		3,000
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Melbourne,	1,075		
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Monrovia,	100		
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Montreal,			9,168
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Mossel Bay,			160
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Noqui,	122 t.	12	
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Old Calabar,	30		
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Para,	733	3	
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Pt. Natal,	403	4	
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Rouen,	15		
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Shediac,	270		
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Stockholm,	50		
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Trinidad,	24	2	
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Valparaiso,	291		
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Salt Cake—

Antwerp,	5 t.	3 c.	£7
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Philadelphia,	50	2	74
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Saltpetre—

Maceio,	9 c.	3 q.	£10
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Sheep Dip—

Sandy Point,	84 t.	16 c.	£—
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M. Video,	51	1	2,152
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B. Ayres,	2	16	2 q.	993
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Calcutta,				63
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Feemantle,	1	3	3	44
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Soap—

Accra,	120 bxs.		
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Alexandria,	10		
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Algoa Bay,	2,600		
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Barbadoes,	200		
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Barcelona,	12		
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Bereby,	40		
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Boma,	100		
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Bombay,	50		
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Buguma,	200		39 cs.
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Calcutta,			60
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Callao,			1
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Cameroons,	750		
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Cape Town,	2,205		
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Constantinople,

Curacao,	290		
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Delagoa Bay,	525	13 bdis.	70
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E. London,			62
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Ferrol,		
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Soap—	
Bombay,	20 cs.
Soda Ash—	
Hamburg,	150 cks.
Soda Crystals—	
Alexandria,	10 brls.
Tar Oil—	
Hamburg,	4 cks.
Turpentine—	
Alexandria,	20 dms.

HULL.

Week ending September 4th.

Alkali—	
Bremen,	8 cks.
Venice,	5 cs. 25 bls.
Ammonium Sulphate—	
Palermo,	100 bgs.
Stettin,	538
Venice,	117
Antwerp,	368
Antimony—	
New York,	100 cks.
Barytes—	
New York,	100 cks.
Stettin,	3,010 c.
Bleaching Powder—	
New York,	56 cks.
Caustic Soda—	
Christiania,	2 cks.
Libau,	3 dms.
Marseilles,	5
Chemicals (otherwise undescribed)	
Antwerp,	1 cs.
Amsterdam,	50 brls.
Bergen,	6 cks.
Bombay,	300
Bremen,	3
Copenhagen,	1465
Christiania,	1476 pks.
Danzig,	8
Gothenburg,	10
Hamburg,	4
Helsingfors,	1
Kurrachee,	571 brls.
Libau,	5
Messina,	1
Naples,	3
Rotterdam,	14
Stettin,	30
Wyburg,	6
Cottonseed Oil—	
Antwerp,	203 c.
Amsterdam,	1,287
Bremen,	104
Copenhagen,	507
Dunkirk,	100
Gothenburg,	100
Hamburg,	1,038
Marseilles,	2,270
Rouen,	393
Rotterdam,	299
Stockholm,	117
Stettin,	100
Trieste,	260
Dyestuffs (otherwise undescribed)	
Danzig,	5 cks.
Rotterdam,	6 kgs.
Stettin,	1
Glue—	
Rotterdam,	4 bgs.
Guanine—	
Dunkirk,	600 sks.
Linseed Oil—	
Antwerp,	7 c.
Amsterdam,	199
Bombay,	350
Christiania,	235
Drontheim,	53
Hamburg,	338
Kurrachee,	24
Trieste,	126
Manure—	
Danzig,	179 t.
Marseilles,	150 bgs.
Stettin,	1,872
Naphthol—	
Marseilles,	54 cks.
Paint—	
Bergen,	1 ck.
Bombay,	7 cs.
Genoa,	20 kgs.
Painters' Colours—	
Antwerp,	24 cks.
Amsterdam,	3
Bombay,	104 cs.
Catania,	2,254 pks.

Copenhagen,	5
Christiania,	46
Danzig,	48
Drontheim,	20 dms.
Genoa,	40
Gothenburg,	1
Hamburg,	4
Harlingen,	2
Kurrachee,	5
Marseilles,	163 pks.
New York,	6
Rouen,	20
Stockholm,	10
Stettin,	4
Trieste,	74
	18
	38

Pitch—	
Antwerp,	52 t.
Helsingfors,	206 cks.
Kurrachee,	113
Sheep Dip—	
Palermo,	1 dm.
Soap—	
Copenhagen,	1 cs.
Stockholm,	1
Superphosphates—	
Gothenburg,	200 bgs.
Tallow—	
Amsterdam,	26 cks.
Bombay,	11 brls.
Rotterdam,	7
Stockholm,	24
Tar—	
Bremen,	10 cks.
Copenhagen,	95
Dunkirk,	15
Ghent,	2
Hamburg,	68
Helsingfors,	100
Wyburg,	50
Varnish—	
Antwerp,	4 cks.
Bombay,	134 dms.
Bremen,	2
Copenhagen,	2
Danzig,	1
Ghent,	1
Hamburg,	5
Marseilles,	4
Stockholm,	3
Stettin,	16

GLASGOW.

Week ending September 9th.

Ammonia—	
Christiansund,	10 c.
Ammonium Sulphate—	
Nantes,	50 t. 18½ c.
Venice,	4310
Bordeaux,	21
Rouen,	71
Hamburg,	50
Barcelona,	24
Demerara,	188
Valencia,	80
Bleaching Powder—	
Calcutta,	91 t. 17 c.
Borax—	
Christiania,	11 c.
Caustic Soda—	
Canada,	12 t. 7 c.
Chemicals (otherwise undescribed)	
Calcutta,	£153
Fremantle,	300
Rangoon,	£188
Singapore,	105.
Rotterdam,	£81
	50
Coal Products—	
Alizarine Colours	
U.S.A.,	£58
Benzol	
Hamburg,	17 t.
Creosote Oil	
Danzig,	11 t.
Russia,	£260
Pitch	
Canada,	21 t. 2 c.
Danzig,	50
Russia,	8
Hamburg,	15
Tar	
Danzig,	336 t. 12 c.
Rangoon,	£132
Russia,	304
Drontheim,	6
Cod Oil—	
Cape Town,	£24
Dyestuffs (otherwise undescribed)	
Amsterdam,	£94
Rotterdam,	234
New York,	12 t. 5 c.

Extracts—	
Malayan,	£66
Farina—	
Amsterdam,	£2 14s.
Iodine—	
Rotterdam,	£310
Linseed Oil—	
Canada,	6 t. 10½ c.
E. London,	1 5
Hong Kong,	3 ½
Auckland,	1
Litharge—	
Bombay,	£105
Manganese—	
Rotterdam,	£15
Paint—	
Hiogo,	£25
Painters' Colours—	
Bombay,	£141
Petroleum,	248
Rotterdam,	10
E. London,	£8 16s.
Rangoon,	£10
Sourabaya,	20
Yokohama,	45
Calcutta,	qty.
Oporto,	23
Paraffin Wax—	
Venice,	1 t. 19½ c.
Fiume,	£33
Russia,	760
Barcelona,	20
Valencia,	40
Cape Town,	70
Christiania,	42
Phosphoric Acid—	
Christiania,	£13 10s.
Potassium Bichromate—	
Venice,	£131
Bombay,	112
Hiogo,	£104
Turkey,	13s.
Canada,	£449
Oporto,	165
Sodium Bichromate—	
Venice,	£24
Bombay,	4 t. 13½ c.
Rouen,	10 5½
Canada,	3 2½
Sulphur—	
Demerara,	5 t. 1 c.
Sulphuric Acid—	
Calcutta,	£48
Treacle—	
Christiania,	25 t. 19 c.
E. London,	3 11½
Bergen,	6 10
Turpentine—	
Singapore,	£55
Varnish—	
Bombay,	4 dms.
Alexandria,	2 cs.
Zinc Chloride—	
Bombay,	5 cks.

TYNE.

Week ending September 4th.

Alkali—	
Reval,	1 t. 4 c.
Hamburg,	5 7
Antwerp,	9 14
Rotterdam,	7 14
Copenhagen,	1 14
Amsterdam,	26 3
	25 cks.
Ammonium Carbonate	
Bergen,	5 c.
Ammonium Sulphate—	
Bergen,	1 t.
Antimony—	
Hamburg,	7 t.
Antwerp,	1
Rotterdam,	3
Bergen,	4 c.
St. Petersburg,	25
Asbestos—	
Gibraltar,	7 c.
Christiania,	1 q.
Barium Binocide—	
Hamburg,	2 t. 8 c.
Bleaching Powder—	
Antwerp,	20 t. 5 c.
Rotterdam,	21 7
Aarhus,	2 11
Copenhagen,	1 7
Bergen,	35 14
St. Petersburg,	175 18

Christiania,	5 2
Amsterdam,	9 19
	53 cks.
Caustic Soda—	
Reval,	20 t. 6 c.
Hamburg,	23 1
Ghent,	2 14
Aarhus,	1 3
Copenhagen,	7 5
St. Petersburg,	80
Christiania,	2 18
Guanine—	
Dunkirk,	100 t. 1 c.
Litharge—	
Hamburg,	2 t. 11 c.
Antwerp,	1 3
Manganese—	
Billbao,	50 t.
Magnesia—	
Hamburg,	2 c.
Copenhagen,	8
Mercuric Oxide—	
Smyrna,	10 c.
Paint—	
Antwerp,	4 t. 13 c.
Soda—	
Smyrna,	94 t. 7 c.
Christiania,	17 13
Dunkirk,	31 10
Amsterdam,	25 2
Oporto,	16 3
Soda Ash—	
Antwerp,	1 t. 7 c.
Sodium Sulphate—	
Gothenburg,	275 t.
Sulphur—	
Hamburg,	100 t. 1 c.
Superphosphate—	
Aarhus,	530 t.
Helsingborg,	396
Kolding,	427
Tar—	
Reval,	3 t. 14 c.
White Lead—	
Smyrna,	5 t. 19 c.
Bergen,	1 2

GOOLE.

Week ending September 1st.

Alkali—	
Amsterdam,	2 cks. 2 dms.
Benzol—	
Rotterdam,	11 cks.
Chemicals (otherwise undescribed)	
Amsterdam,	32 cks.
Boulogne,	3
Coal Products (otherwise undes.)—	
Boulogne,	41 cks. 1 cs. 3 pks.
Ghent,	2
Harlingen,	1
Rotterdam,	15
Dyestuffs (otherwise undescribed)	
Rotterdam,	2 cks.
Painters' Colours—	
Amsterdam,	2 cks.
Hamburg,	3
Pitch—	
Antwerp,	103 t.
Salt Cake—	
Ghent,	100 t.
Soap—	
Amsterdam,	2 cks.

GRIMSBY.

Week ending September 4th.

Alkali—	
Hamburg,	20 cs.
Aniline—	
Dieppe,	2 cks.
Caoutchouc—	
Esbjerg,	1 cs.
Coal Products (otherwise undes.)—	
Hamburg,	2 cs.
Rotterdam,	1 ck.
Colours—	
Antwerp,	3 cks. 2 cs.
Dieppe,	6
Gothenburg,	1
Hamburg,	5
	3 pks.
Manure—	
Esbjerg,	5,487 bgs.
Soap—	
Dieppe,	6 cs.

PRICES CURRENT.

WEDNESDAY, SEPT. 15TH, 189

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

Prices stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

		£	s.	d.			£	s.	d.
Acetic, 25% and 40%	per cwt.	5/6	&	8.6	Lime, Acetate (brown) (ex ship)	per ton	5	2	
Glacial	"	40/-			" (grey) (ex ship)	"	8	0	
Acetic S.G., 2000°	"	1	4	0	Magnesium (ribbon and wire)	per oz.	0	2	
Acetic	per lb.	0	0	3 1/4	" Chloride (ex ship)	per ton	2	10	
Acetic (Tower Salts), 30° Tw.	per bottle	0	0	10	" Carbonate	per cwt.	1	17	
(Cylinder), 30° Tw.	"	0	3	0	" Calcined Magnesia	per ton	3	0	
Acetic 80° Tw.	per lb.	0	0	1 1/4	" Sulphate (Epsom Salts)	per ton	2	15	
Acetic	"	0	0	1 1/4	Manganese, Sulphate	"	16	0	
Acetic	nett	0	0	3 1/4	" Borate	per cwt.	2	10	
Acetic	"	0	0	11 1/4	" Ore, 70%	per ton	3	10	
Acetic	"	0	0	11	Methylated Spirit, 61° O.P.	per gallon	0	1	
Alphuric (fuming 50%)	per ton	15	10	0	Naphtha (Wood), Solvent	"	0	2	
" (monohydrate)	"	5	10	0	" Miscible, 60° O.P.	"	0	4	
" (Pyrites, 168°)	"	3	0	0					
"	"	1	5	0	Oils:—				
" (free from arsenic, 145°)	"	1	7	6	Cotton-seed	per ton	16	15	
Sulphurous (solution) S.G. 1025	"	3	0	0	Linseed	"	17	15	
Tannic (pure)	per lb.	0	1	2 1/4	Stearine	per ton	22	0	
Tartaric	"	0	1	1 1/4	Phosphorus (yellow)	per lb.	0	2	
Asenic, white powdered	nett per ton	22	0	0	" (red)	"	0	2	
Alum (loose lump)	"	4	10	0	Potassium (metal)	per oz.	0	3	
Alumina Sulphate (pure)	"	4	2	6	" Bichromate	nett per lb.	0	0	
Aluminoferrous	"	2	3	6	" Carbonate, 90% (ex ship)	per ton	16	10	
Aluminium (Ingot metal 98/99 3/4 %	nett	148	0	0	" Chlorate	per lb.	0	0	
Ammonia, Anhydrous	per lb.	0	1	3	" Cyanide, 98%	"	0	0	
" 880=28° B.	"	0	0	2 1/4	" Hydrate (Caustic Potash) 90%	per ton	23	15	
" =24° B.	"	0	0	1 1/4	" (Caustic Potash) 75/80%	"	20	0	
" Carbonate	nett	0	0	3	" (Caustic Potash) 70/75%	"	19	10	
" Muriate	per ton	18	0	0	" Nitrate (refined)	per cwt.	1	1	
" (sal-ammoniac) 1st & 2nd	per cwt.	33/-	&	1/-	" Permanganate	per cwt.	3	15	
" Nitrate	per ton	31	0	0	" Prussiate Yellow	per lb.	0	0	
" Phosphate	per lb.	0	0	3 1/2	" Sulphate, 90% (ex ship)	per ton	9	15	
" Sulphate (grey) London	per ton	8	2	6	" Muriate, 80% (do.)	"	8	10	
" (grey) Hull	"	8	0	0	Silver (metal)	per oz.	0	2	
Aniline Oil (pure)	per lb.	0	0	7 1/2	Sodium (metal)	per lb.	0	2	
Aniline Salt	"	0	0	7 1/4	" Carb. (refined Soda-ash) 48%	nett per ton	4	15	
Antimony	per ton	29	15	0	" (Caustic Soda-ash) 48%	"	4	5	
" (tartar emetic)	per lb.	0	0	8	" (Carb. Soda-ash) 48%	"	4	0	
" (golden sulphide)	"	0	0	0	" (Alkali) 58%	"	3	1 1/2	
Barium Chloride	per ton	6	10	0	" (Soda Crystals)	"	12	0	
" Carbonate (native)	"	3	10	0	" Acetate (ex-ship)	"	12	0	
" Sulphate (native levigated)	"	42/6	to	65/-	" Arseniate, 45%	"	14	0	
Bleaching Powder, 35%	nett	6	5	0	" Chlorate	per lb.	0	0	
" Liquor, 7%	"	3	10	0	" Borate (Borax)	net, per ton	14	0	
Bisulphide of Carbon	"	12	0	0	" Bichromate	per lb.	0	0	
Chromium Acetate (crystal)	per lb.	0	0	6	" Hydrate (77% Caustic Soda) (f.o.b.) net pr. ton	"	8	10	
Calcium Chloride	per ton	2	2	6	" (74% Caustic Soda)	"	8	0	
China Clay (at Runcorn) in bulk	"	15/-	to	30/-	" (70% Caustic Soda)	"	7	0	
Coal Tar Products and Dyes:—					" (60% Caustic Soda)	"	6	0	
Alizarine (artificial) 20%	nett per lb.	0	0	6 3/4	" (pure liquor 90° Tw.)	"	3	0	
Magenta	"	0	3	9	" 77/78% powdered (99% hydrate)	"	12	0	
Anthracene, 30% A, f.o.b. London	per unit per cwt.	0	0	6	" Bicarbonate	"	6	0	
Benzol, 90's	per gallon	0	1	10	" Hyposulphite	"	5	0	
" 50/90	"	0	2	0	" Manganate, 25%	"	15	0	
Carbolic Acid (crude 60°)	per gallon	0	1	10	" Nitrate (95%) ex-ship Liverpool	per cwt.	0	0	
" (crystallised 40°)	per lb.	0	0	7 1/2	" Nitrite, 98%	per ton	27	0	
" (liquid 95/97%)	per gallon	0	1	0	" Phosphate	"	1	0	
Creosote (ordinary)	"	0	0	2 1/2	" Silicate (glass)	per ton	0	0	
" (filtered for Lucigen light)	"	0	0	3	" (liquid, 100° Tw.)	"	0	0	
Crude Naphtha 30% @ 120° C.	"	0	0	11	" Stannate, 40%	per cwt.	0	0	
Grease Oils, 22° Tw.	per ton	2	15	0	" Sulphate (Salt-cake)	per ton	0	0	
Pitch, f.o.b. Liverpool or Garston	"	1	0	0	" (Glauber's Salts)	"	0	0	
Solvent Naphtha, 90% at 160°	per gallon	0	1	7	" Sulphide	"	0	0	
Copper	per ton	49	12	6	" Sulphite	"	0	0	
" Sulphate	"	16	5	0	Strontium Hydrate, 100%	"	0	0	
" Oxide (copper scales)	"	44	10	0	Sulphocyanide Ammonium, 95%	per lb.	0	0	
Glycerine (crude)	"	30	0	0	" Barium, 95%	"	0	0	
" (distilled S.G. 1250°)	"	60	0	0	" Potassium	"	0	0	
Iodine	nett, per oz.	0	0	7 1/4	Sulphur (Flowers)	per ton	0	0	
Iron Sulphate (copperas)	per ton	1	10	0	" (Roll Brimstone)	"	0	0	
" Sulphide (antimony slag)	"	2	0	0	" Brimstone: Best Quality	"	0	0	
Lead (sheet) for cash	"	14	12	6	Superphosphate of Lime (26%)	"	0	0	
" Litharge Flake (ex ship)	"	15	15	0	Tallow	"	0	0	
" Acetate (white)	"	22	0	0	Tin Crystals	per lb.	0	0	
" brown	"	15	0	0	" English Ingots	per lb.	0	0	
" Lead pure	"	16	15	0	Zinc (Spelter)	"	0	0	
"	"	19	0	0	" Chloride (solution, 100° Tw.)	"	0	0	
					" Sulphate, Crystal	"	0	0	

THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

10

SATURDAY, SEPT. 25 1897.

Vol. XXI.

Contents.

PAGE	PAGE
Crepidam	193
Congress	91
Test Complete Speci-	195
Mine	195
anda	196
Value of a Bacterio-	197
respondents	198
nical Trade	199
Steam Engines and	199
.....	200
Trade Notes	200
Tar and Ammonia Products	200
Miscellaneous Chemical Market	200
The Metal Markets	201
Report on Manure Material	201
Liverpool Oil and Colour Market	201
Hull Paint, Oil, and Colour Report	201
Tyne Chemical Report	201
West of Scotland Chemicals	201
New Companies	202
Imports	202
Exports	205
Prices Current	208

Notices.

Communications for the *Chemical Trade Journal* should be sent by Cheques and Post Office Orders made payable to—
BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

"Expert, Manchester."

NATIONAL TELEPHONE, 3060.

We are invited to forward items of intelligence, or cuttings from newspapers, of interest to the trades concerned.

We will oblige by making their remittances for subscriptions by Post Office Order, crossed and payable to "Davis Bros."

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Full Year (52 numbers)	12s. 6d.
Half Year (26 numbers)	6s. 6d.
Quarterly (13 numbers)	3s. 6d.

Advertisements for the Editor, if intended for insertion in the current issue, should reach the office not later than **Tuesday** evening.

Reports, and correspondence on all matters of interest to the chemical and allied industries, home and foreign, are solicited. Contributors should condense their matter as much as possible, and send only the paper, and in all cases give their names and addresses, not necessarily for publication. Sketches should be sent on separate sheets.

Advertisements.

Advertisements of Situations Vacant, Premises on Sale or To be Let, Wants, and Specific Articles for Sale by Private Contract are charged in the *Chemical Trade Journal* at the following rates:—

Words and under	2s. 6d. per insertion.
Each additional 10 words	6d. "

Advertisements of Situations Wanted are inserted at one-half the above rates when prepaid, viz.:—

Words and under	1s. 6d. per insertion.
Each additional 10 words	3d. "

Advertisements, Announcements in the Directory Columns, and all other notices not prepaid, are charged at the Tariff Rates, which will be forwarded on application.

Advertisements intended for insertion in the current week's issue should reach the office by **Thursday morning** at the latest.

NE SUTOR ULTRA CREPIDAM.

ABOUT two-and-a-half years ago we had occasion to deal with the increasing number of advertisement pages in Government publications. The matter was also hotly taken up by the Secretary of the Newspaper Society, and his advocacy drew a reply from Lord Rosebery. That reply we have carefully preserved, as it formed the only tenable basis for future argument.

There is not the slightest doubt that the conversion of Government publications into advertising mediums is growing. The latest addition has been the "Labour Gazette."

When this paper started it was the one exception in favour of taking advertisements on the self-supporting plea that could be cited. A short time ago it began to place advertisements on the insides and back of the cover. Now, as the Government contend that advertisements are only taken to cover expenses, and as all suggestions that their inclusion tends to a profit are hotly repudiated, there was little to be said against this comparatively trifling invasion.

Yet there cannot be any doubt that this out-of-pocket expenses plea is not genuine, because the expenses of a monthly paper like the "Labour Gazette" are not very erratic; but nevertheless, quite recently eight pages of new advertisements, in addition to the cover pages, have suddenly made their appearance. They include 66 firms, representing no less than 24 trades, ranging from all branches of engineering to sewage purification and tanning.

Now the "Gazette" did not want this number of "ads" at its outset, when the expenses are greatest, so that if this story of only accepting enough "ads" to enable the paper to be conducted without a loss to the public is genuine, it is time the management was overhauled.

The principle of self-support has our hearty acquiescence, but the theory and the practice belie each other, and we are inclined to blame the *practice*. All these Government publications began as inoffensively as the "Labour Gazette," and now they have all developed to a stage of aggressive competition.

The present attitude seems to justify the demand that a balance sheet of some sort should be laid before the Secretary of the Newspaper Society to substantiate this cover-expenses theory.

Individually we are indifferent in the matter as it is a form of competition that we do not fear or even apprehend, but as a matter of principle we take strong exception to a practice which is calculated to do unlimited harm to our *confrères*. The rottenness of the defensive arguments is shown by Lord Rosebery's plausible but almost insulting plea—insulting that is to the intelligence and perspicacity of newspaper proprietors. He tries to get away from the existence of Government competition by suggesting that an advertiser uses a medium that he thinks will suit his purpose best, and if he prefers a Government paper it would not be fair to debate

him the right of using one. This is either "twaddle" or a tangible fact. The probabilities are that it comes under the first heading, because we all know people do not run about with advertisements, begging papers to insert them. If they did, there would be no need for the Government contractors to shower so many reams of circular letters and tariffs over the country as they do. We have a personal knowledge of how persistently the space in these Government publications is touted—not once or twice, but with a feverish ardour.

Moreover, we know a great many of the advertisers in the "Labour Gazette," and to their credit be it said that we also know they are old birds at the game—far too old to be lured on to the limed twig with chaff. The ceaseless suasion of the canvasser would be necessary to success in many of these cases.

Yet, to be fair and square, if there is substance in Lord Rosebery's argument, it is a simple matter to put it to the test. By no means do the enterprising advertiser an injustice and decline his advertisement, but let the Government papers only take his advertisements and those who like him run after their publications. They can then stop their floods of touting circulars for a bit and depend on this new class of advertisers that Lord Rosebery has defined.

Of one thing we are sure, and that is there would not be eleven pages of advertisements in the "Labour Gazette" for long.

Why not drop such feeble subterfuges and run squarely? If the public purse demands that Government publications shall be run at a good profit, like the Patent Office, say so, and everybody knows what to do. It is childish to play hide and seek among threadbare excuses and illogical arguments, that are transparencies at the best.

If the public purse does not stand in need of the profits of Government competition, put a limit on the advertisement pages of the official publications and be honest.

THE SANITARY CONGRESS.

RIVER POLLUTION CONGRESS.

PRESIDING over this section, Major L. Flower (sanitary engineer to the Conservancy Board) said that years and experience had confirmed the opinion he held in 1876, that, if we were to have our rivers purified, the whole country should be mapped out into districts, each under a competent sanitary officer, who should have large powers under conservancy boards formed to legalise his acts. There was not a single pollution for which there was not a remedy, which in many cases would benefit the manufacturers. If not already shown, chemical science was sure to find some means of purifying or cleaning effluents from factories which would be effective and remunerative; and if manufacturers ceased to discharge refuse into the sewers, the treatment of sewage at the outfall would be rendered less difficult. At present sewage, to use the words of the late Dr. Tidy, was a very complex fluid. Major Flower dealt with legislation on the subject, which he contended was inefficient. He held that the remedies were, mainly, improved legislation, the abolishing of all special clauses, and making the fouling of streams a penal offence. Much might be done by individual action, but with regard to river pollution no half measures must be adopted. What the country required was a firm and sound Act of Parliament having compulsory and not permissive powers, entrusted to competent men to carry out, administered in each watershed by a man who by his personal influence could induce polluters to abate the nuisance—not necessarily an autocrat, but one who knew how to exercise the duty entrusted to him with judgment and firmness, governed by conservancy boards to legalise the acts of such officials. He had found it paid to "ask" for that which the courts might "compel." The thing which lay at the root of the matter was waste, and he advocated that the sewage of a country should be returned to the land to produce a fresh supply of food. They should try to get rid of the sewage at a reasonable cost; but if at a loss, the preservation of springs, streams, and rivers from poisonous contamination was of infinitely greater importance. There was an enormous amount of waste in the discharge of trade refuse into streams, but these products might be turned to value for the good of the manufacturer as well as for the good of the country. In conclusion,

he remarked that, looking to the question from all points of view, and well-nigh in despair of obtaining such an enactment as would coincide with the views of all persons interested, why should they not combine in a guild, and endeavour to bring co-operative principles to their aid? Let the members of that league act upon the principles which had governed the Fisheries Preservation Association. He submitted that such an association was quite possible, and if properly organised might meet with the success which had been remarkable in other societies with different objects.

Dr. G. Sims Woodhead followed with a very interesting address on the various processes taking place in the tidal estuaries, which had for so long been regarded as receptacles for sewage. It was essential that these estuaries should be relieved of the sewage matter usually deposited there, and he thought that in the near future they should work hard to keep out of such estuaries all sewage matter whatever.

PRECIPITATION AND FILTRATION.

Mr. R. E. Middleton, in a paper on river pollution from an engineer's point of view, said no chemical treatment of sewage was sufficient to produce an effluent of satisfactory purity. All sewage matter might be efficiently treated by filtration through sand and gravel, in the same way as water was filtered, though at a slower rate, and with more frequent periods of intermission. The Local Government Board were opposed to this system unless it was supplemented by an area of land sufficient to purify the sewage should the filter break down. This, although apparently a short-sighted policy, was not really so, owing to the want of care and attention which many sewage-disposal works received.

TRADE REFUSE WATERS.

Dr. Maclean Wilson, dealing with the question of treating trade waste water before its admission into the public sewers, referred particularly to the waste which passed from woollen manufactories and tanneries, and indicated the cooling and other modifications which were necessary before such waste could be mixed with the sewage. In a short discussion which followed, Mr. Alderman Schofield, of Rawtenstall, pointed out that it was of importance manufacturers should not be robbed of water which would be of use to them. Dr. Wilson, in replying, admitted the trade effluents could only be received where the water-rights of manufacturers were not interfered with. There were cases in Yorkshire, and no doubt also in Lancashire, where the water was used by manufacturers over and over again. But there were a great many cases where this was not so, on the larger streams especially, and where it was possible for the sanitary authority to admit trade waste in the sewers without interfering with water-rights lower down the stream.

EFFLUENTS AND STANDARDS.

Mr. W. Naylor brought forward the subject of standard effluents, and admitted in his address that it would be difficult to fix a standard for trade sewage, but expressed the opinion that it would not be very difficult to fix a standard for a trade effluent. He thought it would be advisable, and a means of some help, if from some source a standard could be suggested, though not fixed, as a guide both to local authorities and to officials administering the Rivers Pollution Act.—Mr. Frank Scudder, who is associated with Sir Henry Roscoe, said that Sir Henry, as adviser to the Mersey and Irwell Joint Committee, had stated that it was in his opinion undesirable to define the maximum amount of pollution to be allowed in an effluent. At a later period, however, as a help to the Committee, he gave certain figures to them, and fixed three standards with a view of comparing the results from the various sewage works within the water-shed. The Joint Committee had not adopted a standard, but had simply taken figures for the purpose of helping them to judge of effluents. Mr. Naylor appeared to be in favour of adopting the Rivers Pollution Commissioners' standard, but to that he objected, because if they knew the absolute amount of nitrogen and of carbon in the effluent, it was of very little value in guiding them to a judgment as to whether the effluent was going to cause any trouble when discharged. It was essential they should not have a definite amount fixed, but should have regard to the quality of the effluent. He took exception also to remarks by Mr. Naylor in regard to the permanganate test, and explained in detail the excellent results of that test in his own experience.—Mr. Naylor, in replying, demurred to the suggestion that he would adopt the Commissioners' standard, and said he had not attacked the permanganate test.

POSSIBLE COMBINATION OF MANCHESTER AND SALFORD SEWAGE SCHEMES.—A meeting of the Rivers Committee of the Manchester Corporation was held this week. An important letter was read from the Salford Corporation asking upon what terms the Salford Corporation would be allowed to join the city in its scheme for conveying its sewage to the Mersey by means of a culvert. The letter intimated that a sub-committee from Salford had been appointed to wait upon them, and the meeting decided to appoint certain of their members to meet the Salford representatives. At the last meeting of the City Council, a joint scheme to include Salford and Eccles was advocated by several speakers.

The Patent List.

is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of Davis and Alfred R. Davis, who report professionally on the use of Chemical Patents.

NOTICES FOR ENGLISH LETTERS PATENT.

of Fuel Blocks. E. J. L. Leuliet. 20,463. September 6.
Matters for Soap Suds. W. Ambler and J. Addyman. 20,478. September 7.
tion of Copper. W. E. Heys. 20,486. September 7.
g Compound. T. Thompson. 20,531. September 7.
e Compound. W. Muir. 20,567. September 7.
zone. H. H. Leigh. 20,572. September 7.
Electrodepositing Apparatus. A. F. Harris. 20,596. Sept. 8.
er. J. E. J. Johnson. 20,660. September 8.
able Pulp and Sawdust. E. M. Fox. 20,664. September 8.
able Wood. E. M. Fox. 20,665. September 8.
of Cement. T. Holden and C. Major. 20,670. September 8.
Electrolytic Diaphragm. 20,703. September 9.
estos. F. J. Lothammer. 20,775. September 9.
ting Apparatus. L. Platt. 20,832. September 10.
roleum. F. J. Lothammer. 20,840. September 10.
for Rendering Wood Uninflammable. E. M. Fox. 20,960. 11.

NOTICES OF LATEST COMPLETE SPECIFICATIONS.

tracts are specially prepared for the Chemical Trade Journal, and the rights of publication are reserved. This is the earliest of tracts of Chemical and allied patents accessible to the

in Furnace Draught Indicators. M. C. Killig, Königbrücker-
esden. Eng. Pat. 16,845. July 16, 1897.

is held in a vertical position, and adjusted by a balance
vane being enclosed in a casing through which the air
vane is connected to an index finger on the exterior of
n the back of which is an opening which admits the air.
lates the amount of air that enters. The mouth of the
vered with gauze to exclude dust, etc. The gauge is fixed on
the furnace, and connected to the smoke flue by a tube.
alm day, the minimum draught to maintain the necessary
ined, and the index finger fixed accordingly. When from
ations the furnace draws more quickly than under normal
he air deflects the index finger, and the draught is checked
its former position. The same principle applies to the
a deficient draught. There are eight figures showing the
struction.

Apparatus for Purifying Carbonic Acid Gas. J. Quirin.
er Ring, Cologne. Eng. Pat. 18,468. August 20, 1896.

It is to separate carbon dioxide from other gases. The
ssed under pressure up a coke-packed tower, down which
, oxidizing chemicals being added if necessary to destroy
organic substances. As the carbonic acid produced
er gases in solution, a current of pure carbon dioxide is
gh the liquid, and thus carries away the useless gases.
hod is to reduce the pressure when these said gases are
m solution. There are two figures, but the patent as a
ry indefinite. Considerable quantities of pure carbon
wanted to purify the carbonic acid solution, but how it is
not mentioned, and "chronic" acid is suggested as an

or Carbonization of Peat by Electric Heating. P. Jebsen,
vik, Norway. Eng. Pat. 22,194. October 6, 1896 (date under the
al Convention, March 13, 1896).

ratus is suitable for carrying out the process described in
3/97. A retort hung on trunnions, fitted with a lid, and
h a hollow central pillar, is lined with asbestos. Iron wire
nd the sides and the central pillar to form a resistance in
circuit, the mains for conducting the current being led
nions. When the carbonization is complete the retort
de down on the trunnions and the contents discharged. The
amework is best made to carry three retorts, and there is
owing this arrangement.

ts in Electrolytes for the Decomposition of Zinc and for
secondary Batteries. H. Leitner, 207, Piccadilly, London. Eng.
January 20, 1897.

modification of patent 24,473/96. The patentee finds that
of zinc is improved in coherency and quality if the lead
te is kept in a high state of oxidation and the electrolyte

is composed of highly oxidizing compounds. The following electrolyte
is therefore advised:—Concentrated solution of zinc sulphate, 50 parts;
pure vitriol, 10 parts; concentrate solution of manganese sulphate, 10
parts; and 30 parts of an ammonia alum solution in a concentrated
form, to which a further amount of zinc sulphate has been added. This
solution can be used in a secondary battery having a porous lead per-
oxide plate for the positive pole and a zinc negative pole. It is proposed
to prepare the latter by electro deposition from the above solution.

A New or Improved Artificial Manure or Fertilizer. A. Schlepitzky,
Landeck, Silesia. Eng. Pat. 20,509. September 16, 1896.

This patent is prefaced with a long and rambling dissertation of a
geological nature, expounding the Hensel system of fertilizing. In
short, a mixture of black or brown coal, burnt lime, or dolomite, and
naturally disintegrated felspathic earths is suggested as a suitable fer-
tilizing compound, or any of the individual ingredients may be used.

SUFFOCATED IN A MINE.

WHERE RESCUING APPARATUS IS WANTED.

AN inquest was held recently at Pendlebury Town Hall, by Mr. J.
F. Price, district coroner, concerning the death of Richard
Smethills, a collier, 22 years of age, of Bridge-street, Pendlebury, who
was found dead under singular circumstances in the Doe Mine at the
Newtown Colliery, Clifton, Pendlebury, belonging to the Clifton and
Kersley Coal Company.

Augustus Fox, collier, of Heaton-street, Pendlebury, said he started
working with the deceased on Wednesday last in the number four shunt
of the Doe Mine at the Newtown Colliery. Witness went down in the
same cage with Smethills on Friday morning. He left him at the
bottom looking after their picks, and witness and another workmate
proceeded to their work. They went past the doors down the brow,
and not through them. Although deceased did not appear at his work
it did not strike him as singular, as he thought he had been detained or
been taken ill, and gone home again. Witness went on with his work
until dinner time when he heard that Smethills had not gone home.
He then in company with the assistant fireman, Assheton, James
Smethills (brother of the deceased), and another workman, went in
search of the deceased. They proceeded along the level, and the return
way in which they found the air all right, but could find no traces of the
missing man. They retraced their steps along the return way, the assistant
fireman saying that a sheet was hung up at the top, and they were
instructed to look behind it. They, however, could see nothing of the
deceased, but a few yards away he saw Smethills' can hanging on a
ledge. Witness then shouted to the others, and he told them that he
thought the deceased was behind the sheet. The assistant fireman
went up the brow but returned, and said it was not safe to go there
unless another sheet was hung up in order to force more air into the old
brow as damp existed. Witness then went up the brow, but was
obliged to return owing to the power of the gas. Witness went up
again five minutes later, and after proceeding some nine or ten
feet he found deceased lying on his back on the ground. The sheet
was then carried higher up the brow to enable witness to fetch the
deceased's body down.—By the Coroner: In his opinion deceased had
been suffocated by the gas, which was very strong; he had seen it
worse, but he himself would not have stopped in it. There was a piece
of timber lying on the ground near the body. He did not regard it as
a fence, although he had to climb over it to reach the body. It could
have been used as a fence by being chalked on, indicating that there
was no way. By the Foreman: He did not know whether the
deceased had ever gone through the doors in the back brow before.
He himself had never gone that way. By Mr. Gerrard: He believed it
was a shorter way through the doors in the back brow and through a new
place to where he and deceased were working, than the way witness and
Smethills had generally gone to their work. The way deceased had
gone to his work last Friday morning would be 90 or 100 yards nearer
than the proper one. Addressing witness, Mr. Gerrard said he had
run great risk of losing his own life in going into the place where
deceased was found. They should have waited until the brattice cloth
had been taken inch by inch, and with it fresh air towards the body.
It was most commendable on his part to try and recover his workmate,
but it was almost culpable negligence to do so before taking proper
precautions. Only a few years ago two firemen were suffocated at
Outwood and Oldham under similar circumstances. In reply to Mr.
Greenall, witness said he had seen gas stronger in mines in North
Staffordshire, but never in the Newtown Colliery than it was in the
place where the deceased was found. By Mr. Gerrard: He was aware of
a rule which precluded workmen from going into other workmen's places
but he did not think such a rule prevented men from using the nearest
way to their work.

The Coroner said it seemed to be an error of judgment on the part of
Dillon not to have fenced off the place where deceased was found. A
verdict of death from suffocation was returned.

Official Memoranda.

(From the Board of Trade Journal.)

THE PRODUCTION OF PETROLEUM.

THE petroleum industry on a great scale is of comparatively recent origin and has attained its present dimensions in consequence of the abundant supplies recently discovered, and the consequent cheapness of its products. The great development of the industry has taken place since the two great oil-fields of Trans-Caucasia and of the United States began to be worked. In addition to these regions, many other parts of the world produce petroleum, though few in sufficient quantity to give it great commercial value. The principal European districts producing mineral oil are Austrian Galicia and Roumania, both of which produce a considerable quantity of petroleum by rather primitive methods. In America, Canada has large supplies of petroleum, principally in the Province of Ontario, and the West Indies, Venezuela, Peru, and other South American countries likewise produce it in greater or less abundance. In Asia, Burmah afforded the chief supply before the great development of the oil-fields of Trans-Caucasia and the United States, and petroleum is also worked in China and Japan, and to a greater extent still in the Dutch East Indies. The following particulars, derived from various official and other sources, show the state of the industry in some of the principal petroleum-producing countries.

Russia.—The chief centre of the Russian naphtha industry is in the Baku Government, upon the Apsheron peninsula. Fairly rich springs exist also in the Terek and Kooban territories. Naphtha is further obtained in the Transcasian territory, in Turkistan, in the Crimea, and in some parts of the Caucasus. The Apsheron peninsula gives about 98 per cent. of the whole yield. The working of the naphtha fields there had already made a commencement in the ninth century, but did not attain any industrial importance until the 'sixties' of the present century. The cause of this was that the processes for obtaining illuminating oil from naphtha were not sufficiently well known, and naphtha was employed exclusively in the crude state, either for burning or as a coarse lubricator. The mode of exploitation of the oil-fields also served to hinder the development of their productiveness. At one time the Crown tried hard to work the springs on its own account, and when this did not succeed it passed to the farming system, but the yield did not even reach two million pounds (pound = 36 lbs. avoirdupois) a year. In consequence of this, from the year 1872, the naphtha industry was declared free, being subject to excise, similar to the general principles of mining legislation, photogen, or illuminating oil. From this moment begins the unexpectedly rapid development of the naphtha industry. Increased boring brought to light immense quantities of oil, and the first considerable naphtha spring, which appeared in 1873, produced a complete revolution; the price of naphtha fell at one blow from 45 to 2 kopecks a pound. The Baku market soon began to offer more naphtha than was necessary for the refineries then existing, so that in 1875 a naphtha crisis took place, and the Government was compelled to abolish the excise on photogen, which it only re-established in 1888, when the naphtha industry had become considerably strengthened. According to a recent report of H.M. Consul at Batoum the total quantity of naphtha produced by the wells of the oil-fields in the neighbourhood of Baku during the past year was in excess of that of the year preceding; the figures being 6,229,060 tons for 1896, against 6,085,431 tons in 1895, or an excess for 1896 of 143,629 tons.

The quantity of crude oil produced by the flowing wells was 1,403,218 tons in 1896, against 1,817,704 tons in 1895; and by pumping wells 4,825,842 tons in 1896 as compared with 4,267,727 tons in 1895.

The naphtha-producing territories at Grozni, in the Northern or Cis-Caucasus, in Galicia, Java, Japan, and Peru, are slowly but surely coming into prominence. Hitherto the Baku mineral oil industry has had to compete with only one serious rival *i.e.*, America, but now the following fresh factors must be counted with, namely:—

The discovery of oil in the district of Grozni, which took place in 1893, and is annually assuming wider proportions. It is stated that there are at present seven firms at work there, obtaining oil in unlimited quantities, which, although it may probably not be of such good quality for refining purposes as the oil produced by the wells on the shores of the Caspian Sea, is nevertheless sufficiently good for burning as fuel.

The extended development of the mineral oil industry in Galicia has had the effect of bringing about a sensible decrease in the quantity of distillate shipped from Batoum to Austro-Hungary during the past year, which circumstance may eventually have the same effect on the markets in Germany, where, according to reports, it is proposed to increase the import duties on mineral oils reaching that country from Russia and America, and to draw the supplies for home consumption in the shape of the crude material from Galicia, erecting in Germany the necessary works for refining purposes.

Dutch East Indies.—The increased production of petroleum in Java, which, owing to its low price, finds a ready sale in the markets of China, and the supplies from that island to Chinese ports are steadily increasing, although it is stated that the kerosene is of inferior quality.

For the working of Javanese petroleum, a company was formed at Amsterdam in March last as a successor to the Dordt'sche Petroleum Maatschappij, which was organised in 1887, and re-organised in 1890.

A recent issue of "Kuhlow's" reports that this company commenced operations in the district of Djaba Kota, residency of Soerabaja, and secured leases and concessions for the best oil territories on the island. It also took an interest in extensive oil lands and Langkat and Palembang on the island of Sumatra, and at Koetei on the island of Borneo.

Besides extending their operations in the residency of Soerabaja, the company, after having placed their first petroleum on the market in 1889, succeeded, in 1893, in opening up the oil fields in the residency of Renbang, which proved highly productive. The oil found there is of excellent quality, and the output permitted a rapid increase in the production of illuminating oil.

The Dordt'sche Petroleum Maatschappij intends in the first place to supply the Java and Madura Markets, the consumption of which increased from about 2,500,000 cases in 1889 to 3,600,000 cases in 1895. Of the latter, 1,250,000 cases were supplied by the Dordt'sche Petroleum Maatschappij. This shows that the company can safely treble its productions before it needs to look around for outside market. The transport facilities are very good. The company controls a fine system for handling its products, consisting of pipes, lines, tank cars, reservoirs, and casing houses, which are distributed all over the island.

Statistics of the last eight years show that the Javanese production of illuminating oil has increased from 8,000 cases in 1889 to 1,250,000 cases in 1896, and the net earnings of the company from 36,697 florins in 1,923,611 florins. The production for January, 1897, amounted to 108,007 cases, as against 87,577 cases for January, 1896. The capital stock of the Dordt'sche Petroleum Maatschappij is 15,000,000 florins, one florin being about equal to 1s. 8d.

Roumania.—From Turn-Severin or thereabouts, on the western frontier of Roumania, the petroleum zone can be traced at the foot of the Carpathian Hills, skirting them in their course through the country towards Bukovina and Galicia, on the north-east. Petroleum is there found in the paludinous pliocene and in the miocene formations: its existence is evident not only by its traces on the surface, but by other indications, such as its smell and its gases. Along the whole length of the zone mentioned may be seen primitive workings of the mineral in the shape of comparatively shallow hand-dug wells. These wells, producing small quantities of oil, are scattered over an area of from 10 to 15 kiloms. From end to end of the zone there are five principal centres at which the workings have been concentrated and at these centres have been found, collected in pockets near the surface, the largest quantities of oil of the first stratum yet discovered. These centres are:—

- 1st. Olt Valley, in the vicinity of Rimnic-Valcea (Valcea District).
- 2nd. Dimbovitza and Talomitza Valleys, in the vicinity of Tirgovești (Dimbovitza District).
- 3rd. Prahova and Telegene Valleys, north of Ploiesti (Prahova District).
- 4th. Buzeu Valley, north of Buzeu (Buzeu District).
- 5th. Trotush and Tazlau Valleys, between Tirgu Ocna to the south and Bacau to the north (Bacau District).

According to several writers, petroleum is to be found not only in the above-mentioned zone, but also in the whole of the plains down to the Danube, which would embrace a zone of say 100 kiloms. in width. This assertion is, to a certain extent, verified by certain and manifest signs of the existence of petroleum, but it is not known at what depth even the first stratum may be met with, as no borings for oil have ever been made in the plains, and the water wells sunk by hand there have not, up to the present, touched any oil pocket however small. So far, at the five centres referred to above, only the first stratum has been worked to any extent. These centres comprise about 50 borings and say 800 hand-dug wells. The deepest successful boring only reaches about 300 metres, and whilst the majority of the hand-dug wells range from 60 to 120 metres none of them go below 200 metres.

The output of crude oil from these borings and wells for the year 1894-95 reached 80,000 tons.

The Consul, in his report, adds that though petroleum has been worked in Roumania for about 25 years, yet considering the small quantity now extracted, and taking into account the extensive zone in which distinct evidence of its existence is to be met with, it is evident that the Roumanian petroleum industry is at present only in its infancy.

United States.—The history of the production of crude petroleum in the United States may be said to have begun with the striking of oil in the Darke well at Titusville in 1859, though petroleum had been known to exist in the country, and especially in what are now the Pennsylvania petroleum regions, from its earliest explorations by the French. The discovery of petroleum at Titusville led not only to the search for

mediate vicinity but all over the United States. There is State in the Union in which explorations for petroleum have not been undertaken. The years from 1859 to 1869 were prolific in the production of companies with capital aggregating hundreds of millions of dollars, some of it representing actual money invested, the rest an inflated idea as to the possibilities of the discovery of oil in the section of the country covered by the operations of the companies. During these years Western Pennsylvania was thoroughly exploited for oil, as were also West Virginia, Eastern Kentucky, Tennessee, Alabama, Colorado, and California. In Texas, oil in some quantities was found. Southern California was thoroughly exploited early in the sixties, and operations have been continuous ever since, though it was not until the late sixties that the production assumed any degree of importance or

1885 seems to have marked a new era in the history of the petroleum industry. The importance of the Trenton limestone as an oil-producing formation in the United States was first recognized at this time, and this was followed by the discovery of the Lima (Ohio) and the Indiana fields. The Lima field alone was derived more than one-third of all the oil produced in the United States in 1889.

The following table, taken from the report of the U.S. Secretary of the Interior for 1896, shows the production of crude petroleum in the United States from the year 1885 to 1895, in barrels of 42 Winchester

	Barrels.
1885	21,858,785
1886	28,064,841
1887	28,283,483
1888	27,612,025
1889	35,163,513
1890	45,822,672
1891	54,291,980
1892	50,509,136
1893	48,412,666
1894	49,344,516
1895	52,983,526

beginning of operations at Titusville, Pennsylvania, in 1859, the total of 709,713,403 barrels of crude petroleum have been produced in the United States. By far the largest portion of the oil produced in what is known as the "Pennsylvania and Ohio oil-fields," these fields producing alone 516,657,260 barrels of 709,713,403 barrels, or nearly 73 per cent. Ohio has produced 33,343,773 barrels, and West Virginia 37,179,604 barrels; and Colorado have produced respectively 6,683,901 and 1,134,664 barrels, while Indiana, which did not figure as a producer until 1889, has produced 11,341,664 barrels, more than which was produced in 1895.

In a recent report to the Foreign Office by H.M. Consul at Lima, Peru, it is stated that the petroleum industry in the north of Peru some 30 years ago, oil having been discovered by drilling in the Mancora estate, near Payta. During that period six oil undertakings have been started, but so far without giving any results. Two kerosene factories exist on this coast; the one produces a dull light, smokes, and cannot bear comparison with American kerosene, which fetches from 8 to 9 soles the former has to be sold at from 2 soles 50c. to 3 soles 10c. to 10 gallons, and only serves for street lighting. From 1885 to 1895, £5,000,000 have been spent on the several undertakings without producing in any single case a fair return. Hundreds of wells have been sunk, some resulting in flowing, others in pumping oil found at a depth varying from 250 to 600 feet, but all of them after a very short flow. Experts from the United States have examined the land north and south of Payta and have given their opinion that, in spite of abundant surface indications in the district, no oil of any importance is likely to be found. The London and Pacific Petroleum Company, at Negritos, 45 miles from Payta, has a pipe line from its wells at Negritos and pumps the oil to six miles to Talara, on the coast, where its refinery is situated from which point it ships its product. This company has produced 8,000,000 barrels of crude oil in the last six years, and produces 200 barrels per day. One of its best wells produces 600 barrels per day when drilled in six years ago, and is still producing a day. There is but little gas in the field, and in the oil is used for fuel in operating the wells. Salt water is used unless the wells are kept pumping continuously. It is not to drill must be secured by grant from the Peruvian Government, as it retains the mineral right in all the land in Peru. The machinery is used almost exclusively.

DECLINE IN THE BAVARIAN GLASS TRADE.

Bayreuth, one of the most important manufacturing towns in Bavaria, exports to America, which amounted in 1891 to

£380,000, were last year only £185,000. Since 1893, the year of the commercial crisis, Bavarian glass manufacturers have had to cut down the working power of their establishments, which, even with this diminished power, they have been keeping up at a great sacrifice in the hopes of better times. The new American tariff, however, not only dissipates the idea of any improvement, but makes it clear that the Bavarian glass industry is placed in a serious position, and the preservation of the United States market, which formerly took more than three-fourths of the whole Bavarian looking-glass trade, is now a question of life for it.

THE CANADIAN LEATHER INDUSTRY.

The export of Canadian leather is a trade of recent growth, but it continues to develop as it has done in the past ten years, it will soon become of national importance. The annual value of sole and upper leather exported from Canada during the last decade is as follows:—

	£
1887	92,000
1888	62,000
1889	139,000
1890	151,000
1891	181,000
1892	211,000
1893	180,000
1894	328,000
1895	265,000
1896	397,000

Thus Canadian exports of leather have more than trebled in ten years. The above table indicates the steady and continuous growth of an industry which is in every way natural to the resources of the country, and is very gratifying to those interested in the development of Canadian industries.

THE SANITARY VALUE OF A BACTERIOLOGICAL EXAMINATION OF WATER.

(Concluded from page 183).

Experiment 7.—The results obtained from croton water were as follows:—

1. Plate cultures grown in air contained 135 colonies.
2. Plates grown in hydrogen contained 30 colonies.
3. The putrefactive test blackened lead paper within 24 hours, and emitted a foul, somewhat fecal odour. Plate cultures from the putrefaction flask revealed the presence of the colon bacillus and the bacillus proteus vulgaris.

4. The fermentation test showed a production of gas, and cultures made from the fermentation tubes revealed the colon bacillus.

It seems safe to infer from these results that the croton water had been exposed to pollution with sewage, but that the latter had been greatly diluted, and probably also exposed to contamination from the air and admixture with some surface drainage. The latter inferences are based upon the large proportion of aerobic bacteria in the water, and of colonies of mycoides and subtilis on the plates developed in the air.

Experiment 8.—A reservoir water from a town near New York yielded the following results:—

1. Plates grown in air contained 2,090 colonies.
2. Plates grown in hydrogen contained 165 colonies.
3. The putrefactive test caused no blackening of the lead paper.
4. The fermentation test showed the production of gas, but cultures prepared from the fermentation tubes failed to reveal the presence of the colon bacillus. There were a few colonies of mycoides on the plates grown in air.

The evidence furnished by these results are in accord with the known facts about this water. They permit the inference that the water had not been contaminated with sewage, and was therefore free from putrefactive and intestinal bacteria, but that it had been exposed to the air and to contact with the upper layer of the soil.

If we accepted the simple enumeration of the bacteria in a water as a guide to a judgment of its purity, we should be erroneously led to consider croton water as purer than this reservoir water, whereas the methods actually employed show the reverse to be the case.

Where the presence of sewage and surface drainage is revealed by these methods, as in the case of the croton water mentioned, we should, in estimating the risk of infection from drinking the water, consider (1) the extent to which the sewage has been diluted, and (2) the dangers incident to the surface drainage.

That the dilution had been considerable is shown by the bacteriological examination, for the number of anaerobic bacteria was small, but the degree of dilution cannot be so accurately gauged by that method as by a chemical examination. Croton water, at the time this

bacteriological examination was made, revealed nothing, on chemical examination, which would cause suspicion that it contained sewage. The dilution must, therefore, have been very considerable.

The danger from the surface drainage could only be estimated by a local inspection of the surroundings of the water.

The results of these examinations and the inferences drawn from them are in close agreement with the known facts regarding the croton and reservoir waters, and they tend to confirm the value of the procedures described.

But it does not always happen that the results of chemical and bacteriological examinations are in such close accord. I had occasion at one time to examine the water from a deep artesian well, and found the water practically free from bacteria. The chemical examination showed the presence of large quantities of the ammonias, nitrates, and chlorides, and the chemist's report strongly condemns the water. Local inspection revealed the fact that the fields around the well were used for the disposal of the sewage from a large penal institution in the neighbourhood, and that the water from the well was used to supply that institution.

It appears to me, that under these conditions, which had persisted for years, the water might be considered as free from objections so long as the upper portions of the well remained water-tight. For it was evident that the percolation of the sewage through the soil removed the bacteria which it contained. The three modes of investigation reveal the conditions obtaining at the time, and also point out the possible future dangers.

It would not do to regard the presence of the colon bacillus as a proof of pollution with sewage without other confirmative evidence. The feces of cattle and other animals contain that bacterium, and it is a pretty widely distributed saprophyte, especially in inhabited regions. The fact that it is found in milk, and, after a day or two, in the intestinal discharges of new-born children, is often cited as proof of its wide distribution. I do not think that too much stress should be given to that evidence when we consider the way in which children are born, and the way in which cows are usually milked. If the colon bacillus is present in a water in considerable quantities, as shown by a series of fermentation tubes, it is very unlikely that it gained access to the water in an innocent way.

When the colon bacillus reaches a water in company with sewage, there is sufficient organic matter of animal origin to furnish it with nourishment, favouring its rapid multiplication. We have had an example of this multiplication of the sewage bacteria, of which the colon bacillus formed a considerable proportion, in Experiment 6. In three days the number of bacteria rose from 260 to 18,187, an increase of nearly 600 per cent.

In order to gain a clearer idea of the conditions under which the colon bacillus would multiply in water, the following three experiments were instituted:—

Three sterilized, cotton-plugged flasks each received one liter of distilled water, which was boiled in the flasks for one hour to sterilize it.

Experiment 9.—To one of these flasks one cc. of a filtered suspension of the colon bacillus, in sterilized distilled water, was added. The bacillus had been grown upon agar in order to get an abundant growth with the least admixture of organic matter from the nutrient medium. It was then carefully scraped off the surface of the agar and mixed with the sterilized water. After this the mixture was filtered in order to remove any considerable masses of bacilli not broken up during the mixing. After vigorous shaking the water in the flask contained 42,791 bacilli per cubic centimeter, as shown by plate culture.

The flask was kept at the room temperature, exposed to diffuse daylight. After twenty-four hours the water was again examined, when it was found that the number of bacilli had fallen to fourteen.

Experiment 10.—The second flask received, in addition to the colon bacillus, one cc. of nutrient bouillon. After the mixture was made, the water in this flask contained 57,102 bacilli to the cubic centimeter. After twenty-four hours it contained 29,276.

Experiment 11.—The third flask received an addition of one cc. of an infusion of hay, instead of the bouillon. On the first day the water contained 14,030 bacilli. After twenty-four hours the number had fallen to 439.

These three experiments go to show that the colon bacillus requires a considerable quantity of organic matter for its abundant multiplication. Dr. A. P. Hallock kindly made a chemical examination of the water in these three flasks, with the following results:—

		Parts in 100,000.	
Flask 1.	Free ammonia	..	0.00575
	Albuminoid ammonia	..	0.00175
Flask 2.	Free ammonia	..	0.03675
	Albuminoid ammonia	..	0.2672
Flask 3.	Free ammonia	..	0.0125
	Albuminoid ammonia	..	0.0008

Numerous experiments have been made by various investigators to learn the behaviour of the colon bacillus when introduced into natural

waters, both with and without previous sterilization. Their results have, in the main, been the same as those just given for these artificial mixtures. As a rule, the number of bacilli decreased, but sometimes it remained about the same, or increased slightly, but not to the same degree as did the number of so-called "water bacteria" in the sample.

It seems to me that these observations support the belief that the colon bacilli, which accidentally gained entrance to a water, without an associated pollution with sewage, would fail to multiply to any great extent, and that they would certainly very rarely lead to erroneous inferences from the results of a bacteriological examination. Neither the colon bacillus nor the widely distributed proteus vulgaris cause the evolution of hydrogen sulphide when they are present in water submitted to the putrefactive test. So that an accidental presence of those bacteria would not be bacteriologically equivalent to admixture with sewage.

In this connection it would be of interest to know about the viability of the colon bacillus when subjected to desiccation and light.

The following experiments have a bearing upon this question:—

Small threads of sterilized silk were moistened with bouillon cultures of the colon bacillus and then dried in a desiccator over sulphuric acid.

Experiment 12.—Bouillon culture grown in the incubator. Threads exposed to diffuse daylight. The bacillus failed to develop when the threads were placed in fresh bouillon after thirteen days of desiccation.

Experiment 13.—Bouillon culture grown at the room temperature. Threads exposed to diffuse daylight. Bacillus dead after twenty days.

Experiment 14.—Bouillon culture grown in incubator. Threads exposed to sunlight. Bacilli dead after six days.

Experiment 15.—Bouillon culture grown at the room temperature. Threads exposed to sunlight. Bacilli dead after ten days.

Similar experiments made with threads moistened with a suspension of human feces, gave the following results:—

Experiment 16.—When exposed to drying over sulphuric acid *in vacuo*, or under ordinary atmospheric pressure, and when exposed to diffuse daylight or direct sunlight, these threads all produced a distinct growth in bouillon after thirty-four days, when the observations were discontinued.

It therefore appears that the viability of the colon bacillus depends upon the conditions under which it is placed. There is apparently no danger of its speedy death when it is associated with fecal matter.

Experience shows that many natural waters, which might readily have received small quantities of the colon bacillus from dust or the surface of the ground, do not contain it in sufficient abundance for its detection by the methods described. This experience is in harmony with the results of the experiments here recorded.

It is, of course, conceivable that a good water might contain adventitious colon bacilli, and this possibility should be borne in mind when conclusions are drawn from the results of a bacteriological examination. It is not probable, however, that such a water would contain a large proportion of anaerobic bacteria, or give a positive outcome to the putrefactive test. If the colon bacillus appeared in considerable quantities in a water, as the result, for example, of drainage from barn-yards, it seems to me that it would indicate an objectionable pollution, even though it were no sign of the presence of human excreta. The author believes, therefore, that the possible conditions which might lead to erroneous inferences from the bacteriological methods of water examination here described, do not seriously invalidate the conclusion that the plan offered is better calculated to give a just estimate of the fitness of a water for drinking purposes than the methods in more common use, and that they are likely to be of considerable service in a sanitary examination of water.

It is hoped that those who are interested in the subject will put these methods to a practical test.—*Jour. Am. Chem. Soc.*

ANSWERS TO CORRESPONDENTS.

- I. G. Co.—We shall be pleased to have the particulars as early as possible.
 A. E. J.—You will receive a copy in due course; probably this week.
 A. Co.—It is practically the same. The block will be returned shortly.
 R. C.—We are obliged. It nearly all appeared at the time of the meeting.
 M. P. C. Co.—All that is exported from this country, no matter what the destination appears in our columns. If they do not get there it is because the shipments are not in the Government returns. If you have any cause to apprehend that such is the case, kindly let us know.

QUERIES.

- A correspondent asks for the following information:—
 I. What is the best way of boiling corrosive liquids by steam, keeping the steam, of course, apart from the liquid? I have hitherto used a large galvanised tank with a coil of steam pipes, but the material eats away the worm of the pipes, and leakage soon results. What about a false bottom, or a strong galvanised steam tank inside the large tank?
 II. I want a method of thoroughly mixing various plastic materials in quantities of 10 cwt. to 4 or 5 tons at a time. Who can advise me of any suitable machinery?
 III. What is the best disintegrating machinery for the grinding of hard laked clay into a powder? I want it to be efficient as well as economical. State quantity that can be treated per day, and power required.—CHEMISTS.

THE TYNE CHEMICAL TRADE.

The following list has been specially abstracted from the yearly analysis made by the Tyne Improvement Commissioners of goods imported and exported from the Tyne in 1896. As the figures include sea shipments, the coastwise total is given as well as the total for the year, the difference being the amount of foreign exports or imports, as the case may be. The total for 1895 is given for the purpose of comparison:—

Description of Goods.	IMPORTS.		
	Total Coastwise.	Total 1896.	Total 1895.
.. .. . tons	892	894	1,061
.. .. . "	64	173	912
.. .. . "	164	2,939	2,519
ad Salt Cakes "	510	510	5,610
.. .. . "	2,608	2,634	2,567
.. .. . "	153	153	495
als (o u.) "	7,261	8,221	3,156
May and Stone "	9,636	9,637	8,309
.. .. . "	187	531	480
.. .. . "	763	763	867
ers' Stores "	5,134	5,882	5,401
and Linseed Cake "	1,166	2,856	2,899
e and Colours "	900	1,393	1,139
.. .. . "	572	659	1,156
.. .. . "	9	27	1,209
and Manure "	866	883	1,098
of Soda "	65	5,963	4,985
ites "	—	18,774	16,216
ny Ore "	1,391	2,513	2,186
ulphur Ore "	59,552	59,552	78,589
ese and Manganese Ore "	649	810	529
Ore "	102	57,704	56,209
of Paris and Whiting "	1,189	1,233	1,009
.. .. . "	68,745	75,488	80,259
.. .. . "	11,708	12,046	13,904
neral) "	3,808	24,722	24,398
er sorts) "	4,402	4,642	4,500
Pitch (Mineral) "	446	491	425
ine, Varnish and Putty "	857	866	779
Fat, and Grease "	2,147	3,515	3,481
pent "	560	722	1,140
anners' "	7,345	4,446	7,016
.. .. . "	185	1,264	1,233
.. .. . "	6	6	3
Grass "	—	4,569	9,369
tter "	41	3,549	2,534
.. .. . "	156	3,402	2,489
.. .. . "	269	269	404
Pitch "	709	5,742	6,133
.. .. . "	117	117	95
ulp "	270	6,021	3,365
Description of Goods.	EXPORTS.		
	Total Coastwise.	Total 1896.	Total 1895.
.. .. . tons	1	4	1
nd Soda Ash "	2,139	8,862	10,110
nd Alum Cake "	5,249	6,084	3,949
ia and Sal ammoniac "	—	3,741	3,990
.. .. . "	51	255	250
Carb. and Sulph. "	1,489	7,150	4,539
Manufactures "	546	1,009	1,034
nate of Soda "	52	110	97
g Powder "	14,729	27,209	31,803
Soda "	7,966	17,784	18,275
.. .. . "	189	250	200
Salts "	4	42	44
phite of Soda "	627	1,258	1,308
.. .. . "	214	512	437
ate of Soda "	—	—	—
(o.u.) "	5,894	24,889	19,743
of Soda "	25	66	115
.. .. . "	3	44	53
rdening and Gypsum "	508	520	931
.. .. . "	111	122	130
ystals "	39,205	37,281	42,147
of Soda "	14	9,871	12,954
.. .. . "	452	8,805	9,494
of Soda "	124	377	400
ls (o.u.) "	469	1,720	621
.. .. . "	28,310	39,042	23,598
.. .. . "	12	16	12
y and Antimony Ore "	338	1,249	1,303
.. .. . "	157	548	971

Description of Goods.	Total Coastwise.	Total 1896.	Total 1895.
Red and White Leads and Paint "	17,574	22,159	20,909
Lampblack and Coal Dust "	180	210	237
Lime "	347	347	235
Oil, Varnish, and Turpentine "	12,463	12,988	8,651
Paper "	4,172	4,391	5,576
Patent Fuel "	—	—	220
Plaster of Paris and Whiting "	1,374	1,475	129
Purple Iron Ore "	62,524	62,524	57,682
Salt "	49	220	338
Slag and Mill Cinders "	729	5,516	18,225
Sugar and Molasses "	23	31	15
Tar, Pitch, and Resin "	23	184	299
Venetian Red "	281	442	623
Vinegar and Acids "	16	122	96
Wood Pulp "	70	70	36
Zinc Ore "	28	1,772	1,772

It is interesting to know to or from what countries the chief shipments of some of the more important items come or go, and we therefore append the following special analysis:—

Imports.—Barytes have increased, but the supplies have fallen off from Germany, the shipments from Holland and Belgium having exceeded the grand total of 1895. There is a further advance of about 50 tons in glucose—all from the U.S.A. In phosphates, though there is a net increase, the U.S.A. imports have fallen nearly 3,000 tons, Algerian ports having accounted for over 6½ thousand tons. The Belgian contribution remains about stationary. There has been an astonishing decrease in the imports of bones. The imports of sulphur ore show an increase, Spain being the chief source of supply. While there has been a decrease in salt, Germany has imported 6,738 tons. The imports of esparto grass have fallen 50%. Resin has increased nearly 1,000 tons.

Exports.—Denmark and Austria Turkey and Greece took three out of the four tons of blacking exported. As before the largest shipments of alkali went to Sweden, but Russia supplants Belgium for the second place. The U.S.A. total has fallen from 1,075 tons to 33. With regard to bleach there has been a net decline. Belgium and Russia again stand first and second as the biggest consumers from this port. U.S.A. stand seventh instead of fourth, with 501 tons. Spain took most caustic soda, Russia being second, followed by U.S.A., Germany and Belgium. The States thus come third with a total of 1,280 tons against 1,855 tons in 1895 and 2,205 tons in 1894. The shipments of manganate of soda were again *nil*. The States take the lead in hyposulphite with 422 tons. Norway and Sweden took three-fourths of the sulphur exported. In silicate of soda Portugal comes first, followed by Italy and Spain. Soda crystals remain as last year. Algeria and Egypt took all the salt, save 10 tons, to Norway, apart from coastwise shipments.

THE CARE OF STEAM ENGINES AND BOILERS.

At the recent Trades Union Congress in Birmingham, Mr. R. Carr proposed "That this Congress, through the Parliamentary Committee, urges upon the Government the necessity of all persons having charge of steam engines and boilers passing a practical examination as to their fitness for such responsibilities, and on passing such examination they be granted certificates of practical competency; that no person or persons shall be allowed to take charge of any steam engine or boiler who does not hold such a certificate, and that the Parliamentary Committee be instructed to press forward the Bill as introduced during the last session of Parliament by Mr. Samuel, M.P., which passed its second reading with such a large majority; that the secretary and Parliamentary Committee use their influence to obtain as many members of Parliament as possible to back the Bill; that the Congress instructs the secretary and the Parliamentary Committee to use all possible means to have a system established in all cities and towns where the tram system is worked to have licences granted by the Watch Committees, or persons authorised by the same, to practical men only, and that they must produce a character to show their practical fitness before being allowed to take charge; and that in any factory in which is used machinery, and where steam is generated for the motive power thereof, a practical male person, not less than twenty-one years of age, shall be appointed for the purpose of working the machinery which provides the power to drive the shafting that is used in the various parts of the factory, and shall attend for that purpose during the whole time any persons are working, where mechanical power is supplied for any manufacturing process or handicraft." He said legislation was absolutely necessary, for since the Boilers Bill came into force in 1882 something like 402 lives had been lost and 854 persons had been injured, according to the Board of Trade returns, owing to the incompetence of the persons in charge of the steam engines and boilers. Mr. Roworth seconded the resolution, remarking that the responsibility cast on men in charge of steam engines and boilers was so great that they should be men of practical experience. Mr. G. H. Copley supported the resolution, which was carried.

Our Book Shelf.

ANALYST'S LABORATORY COMPANION. By A. E. Johnson 2nd Edition, 96 pp. Index. London: J. and A. Churchill. 1897.

Seeing the time that has elapsed since we reviewed the first edition of this little book, it strikes us as a matter for surprise that we have not had a second edition earlier. The collection of tables and data is a most useful one, and is especially serviceable to public analysts, agricultural brewers, and general works chemists. All the tables are neatly and clearly printed, the interleaving of certain tables with blank ruled pages being a most commendable feature.

Several of the tables have been re-calculated, and many sections re-written. The weights and measures have been re-considered in the light of Mr. Chaney's new standard work on this subject. One of the most important changes is the substitution of a table of five-figure logarithms for a table of seven-figure logarithms up to 1,000. Among the new tables we note those for milk and butter analysis, the estimation of added water in diluted spirits, a glycerine table and one showing percentages of nitrogen and ammonia per cubic centimetre of acid with the Kjeldahl process. The second edition is thus a distinct advance on the first in the matter of utility, while the revision process has not entailed the suppression of any of the important original characteristics.

PAMPHLETS:—*Handbook of the Workmen's Compensation Act, 1897.* This is a digest of the Act, with explanatory notes, embracing the subjects of decisions on accidents, negligence, misconduct, and arbitration. As a barrister-at-law, Mr. Roberts-Jones has been able to make a wise selection of citations and legal references that renders much aid in the comprehension of this complicated Act. The pamphlet is published by the *Western Mail, Ltd.*, Cardiff, and at 82, Fleet-street, E.C., at a shilling, and is well worth the attention of all employers. The blank forms of notices given at the end, add greatly to the practical value of the publication.

The Deadly 73°, published by Messrs. Simpkin, Marshall, Hamilton, Kent, and Co., Ltd., at one shilling, is an excellently got up reprint of the articles that recently appeared in the *Star* on the danger of low flash oil, to which we directed the attention of readers some time ago. In this new form the articles are more readable and pointed than ever. The little book has now been the subject of leaderettes in most of the leading daily papers, and has, we think, struck the winning blow in the fight for safe burning oil. There is practically nothing technical in the text, which abounds in interesting and exciting matter.

Aluminium. Under this title the Aluminium Supply Co., Ltd., of 38, Victoria Buildings, Manchester, has compiled a collection of facts and figures about this important metal that will be found most interesting as well as useful to engineers, instrument makers, and others. It is not merely a statistical and tabular record, for nearly half of it is devoted to short articles on the influence of aluminium on copper, iron, steel, and other alloys. The methods of working the metal, such as casting, drawing, rolling, annealing, dipping, plating, and frosting, also find a place. It is well illustrated with views of the chief centres of manufacture, such as Foyers, Niagara, the French and Swiss centres, and other related illustrations. The use of "alum" through the text as an abbreviation for aluminium is no doubt convenient, but somehow it goes against the grain. This point, however, does not effect the utility of the booklet to all interested in metals and alloys, to whom we heartily commend it. It is stoutly but neatly bound in blue cloth boards.

Annali del Laboratorio Chimico Centrale Delle Gabelle. Vol. III. Published by G. Bertero, Via Umbria, Rome. This volume contains ten contributions to analytical and technical chemistry which relate mainly to some products recovered from oil of sesame and their influence on the colour reactions of the oil. The composition of Italian farinas, and the characteristics which influence their commercial values. A special study is made of a product obtained from gelso fibre. There are contributions to the analysis of soaps and candied fruits. M. Tortelli has been engaged on a series of researches with dégras. The chemical composition of some Grecian wines and the estimation of glycerine in sweet wines have also been the subject of investigation. Lastly, there are notes on the consumption of petroleum in Italy for illuminating purposes and the preparation of paraphenetol-carlamide.

Scientific Wool Scouring. This pamphlet is to be obtained for one shilling from Cawood's Vegetable Scour Syndicate, Sculcoates Hall. When looking over the manuscript, we referred recently in the *Journal* to its forthcoming publication. It is now before us, and proves to be a helpful little pamphlet on wool scouring and the treatment of the suds. It deals mainly with the results achieved with the Vegetable Scour, and they are certainly good. As the damage done in the scouring can never be remedied, the pamphlet is worth careful attention by all wool scourers. The question of cost is fully considered, as well as the advantages claimed for the vegetable scour.

CATALOGUES:—*Magnesia Coverings*, as made by the Washington Chemical Co., Ltd., County Durham, are fully described, the text being freely and well illustrated. Some of the full page illustrations of complete installations on which these coverings have been used are excellent. This descriptive pamphlet-catalogue is of particular interest to all steam users. *Pekne's Pumps.* The 1897 catalogue of pumps made by this firm consists of 177 pages, bound in bluish green cloth boards. It is freely illustrated, and the appendix contains several useful tables and pumping data. Mr. C. Harzer, 79½, Gracechurch-street, London, is the sole agent for the United Kingdom, Australia and the Colonies, to whom all communications should be addressed.

Trade Notes.

COAL DISCOVERIES IN THE MIDLANDS.—The boring for coal on Lord Dudley's Himley estate has resulted in the finding of carboniferous rocks, a discovery which is regarded by the mining community in the Midlands as the most important since 1871, when sinking operations at Sandwell were commenced. The operations at Sandwell proved the existence of seams of coal beyond the limits of the then known South Staffordshire coalfields on the eastern side, and the borings at Himley give similar results so far as the western boundaries are concerned. In the event of the present discovery resulting in the finding of a thick bed of workable coal, it is proposed to put down colliery plant at a cost of £100,000. If the enterprise is a success it will prove the continuity of the Shropshire and South Staffordshire coalfield, which it is believed has only been broken by fractures, and will be the pioneer of enterprises all along the western boundary. It will also support the theory that in Staffordshire and Warwickshire there is really only one coalfield, with Birmingham in the centre of it.

SALICYLIC ACID AND RASPBERRY WINE.—At the Liverpool Police Court, last week, before Mr. Stewart, stipendiary magistrate, an information was laid at the instance of Mr. Collingwood Williams, the Liverpool public analyst, against Mr. Hunter Ritson, a local grocer, for having sold a bottle of raspberry wine which contained salicylic acid at the rate of 130 grains per gallon. The case was defended by Messrs. Patterson, of Glasgow, the manufacturers of the wine, Mr. Tobin, barrister, appearing on their behalf. Mr. Williams stated that he had analysed the wine, and found that it contained 130 grains of salicylic acid per gallon, whereas, in his opinion, even in a case where the pure fruit was used not more than 10 grains per gallon was necessary. He admitted, in cross-examination, that the bulk of raspberry wine is made from fruit essences, and not from the fruit itself, and when made from the fruit direct it required more of the acid to preserve it.—Mr. Tobin, for the defence, contended that no more acid had been used than was necessary, seeing that the manufacturers in this case used the pure fruit. He was prepared to call medical evidence to show that the wine in question did not contain acid to any injurious extent.—Dr. Baron was then examined, and stated that in his view 130 grains of the acid per gallon was not harmful or injurious in any way.—The magistrate said that this evidence appeared to him sufficient. The acid was not added for any improper purpose, but simply for the purpose of preserving the wine, and he had medical evidence that there was nothing prejudicial in it to the extent to which it had been used in this case. He therefore dismissed the information.

Market Reports.

TAR AND AMMONIA PRODUCTS.

There is a little improvement in benzols, the price for 50's now being 2s., and 50/90's 2s. 1d. Carbolic acids are very quiet, there being scarcely anything doing in crude at 1s. 10d. and crystals 7½d.; liquid remains at 1s. Naphthas stand in a rather better position than carbolics, but prices are unchanged at 1s. 7d. for solvent and 11d. for crude. Anthracene, 30%, A 5½d., and B 4½d. Pitch a little firmer at 20s. 6d., f.o.b. East Coast.

Sulphate of ammonia is in good demand for immediate delivery, and the forward market is also firmer and more active. Considerable purchases have been made for October delivery at topmost prompt prices. Closing values for prompt are: Beckton £8., London outside makes £8. 2s. 6d., Liverpool £8. 3s. 9d. to £8. 5s., Hull £8. 2s. 6d. and Leith £8. 3s. 9d. to £8. 5s. In the North makers are asking an advance of 7s. 6d. to 10s. per ton for forward. According to the late advices the Nitrate Combine has practically collapsed and only need time for its final dissolution.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade business is moderately active in all the main products. Prices are steady all round, and in the home trade a fair

business has already been done for 1898 delivery in alkalis and powder at current prices. For spot delivery prices of caustic as last week, viz.—f.o.b. Liverpool, 10 ton lots and upwards, 74%, £8. 10s.; 70%, £7. 10s.; 60%, £6. 10s. per ton. 58%, remains firm at £3. 17s. 6d., bags, f.o.r. makers' works. Potash and bicarbonate are without any fluctuation. Bleaching f.o.r. £6. 5s. per ton; and f.o.b. £6. 10s. to £6. 12s. 6d. of potash and soda ash, and 3½d. respectively, but the former has a weaker tendency. Sulphate of copper active both for and forward delivery at £6. 12s. 6d. per ton, £17. having been spring delivery. Saltcake is finding more ready sale at 19s. per cwt. Acetate of lime, brown and grey, are dearer; all other acetates Lead salts are firm. Prussiate of potash, 5½d. to 5¾d. per lb. 10½d. Sulphocyanides quiet and prices lower. Arsenic in good demand at £21. 15s. to £22. The state of trade in is unusually quiet in all the manufacturing districts, and generally are depressed.

THE METAL MARKET.

DON, WEDNESDAY.—Pig iron firm; Scotch warrants closed at 4d.; Middlesbrough, 41s. 10d. cash; and hematite, 47s. 3d. quiet; Chili bars, G.O.B.'s and G.M.B.'s, closed at £49. to £49. 12s. 6d. cash, and £49. 15s. to £50. three months. Tin dull: Straits closed at £61. 15s. to £62. 5s. and £62. 6s. 3d. to £62. 16s. 3d. three months. Australian £62. English ingots, £65. 10s. Lead dealer: Spanish, £13. 2s. 6d. tober delivery; English, £13. 17s. 6d. Silesian spelter, £17. 15s. Nickel, 1s. 2½d. Antimony, £29. 10s. Quick-First hands, £6. 15s. 6d.; second hands, £6. 14s. Copper quiet: Cape, 2½ to 2¾; Copiapo, 1¾ to 2½; Libiola, 2¾; Mason and Barry, 2¾ to 3; Rio Tinto, 23½ to 23¾; 6½ to 6¾.

REPORT ON MANURE MATERIAL.

market continues steady, but rather quiet. Quotations for phosphates are unchanged, and for shipment over the next months full prices would have to be paid, owing to advanced. For later shipment, sellers might be disposed to entertain less. There is nothing to report in River Plate bones, but 6s. per ton would be readily obtainable for handy cargoes for export. In the absence of stocks there is nothing doing on spot in Indian bone meal, but for shipment there would still be sellers 17s. 6d.; from store there are sellers of crushed Kurrachee at 1. 6d. per ton. Nitrate of soda is quiet in all positions, and quotation for fine quality is now 7s. 6d. per cwt. There is very little doing in cargoes afloat or for shipment, owing to indifference of

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

S.—There is practically nothing doing in palm oil, and prices minimal. Olive keeps very firm in price, and 40 tons of Seville are sold. Supplies are now limited. Linseed has fallen in price, to 18s. per cwt. now being quotation for Liverpool makes in tasks. The market, however, closes firmer. Cottonseed is quiet 9d. to 17s. 6d. per cwt. for Liverpool refined. Castor oil is and prices are well maintained at 3¾d. per lb. for good seconds. a, and 3½d. to 3¾d. per lb. for first pressure French. Tallow is in price, but the market is dull. Resin so far shows no change, but there is only a very small business doing at the old rates. of turpentine are firm and dearer at 23s. 6d. Petroleum und.

ES.—West American linseeds are lower in price at £5. 17s. 6d. 5s., and quiet thereat; Liverpool makes are steady at £7. to 8s. per ton. Choice American decorticated cottonseed are firm and inclined to rise, there being a good business doing at £5. 15s. to 16s.; Liverpool makes are moving fairly well at £6. 5s. to £6. 17s. Liverpool undecorticated is in moderate request at £4. 1s. 3d. to 4s., according to quality and brand. Egyptians have gone back to slack at £3. 18s. 9d. per ton.

OURS.—Prices are steady, and practically without change. Oxfordshire—common £10., medium £12., best £15.;shire—common 40s., medium 50s., best 60s.; Welsh—best 90s., 8s. 50s., and common 18s.; Irish, Devonshire, 40s. to 45s.; J.C., 65s. Umber: 40s. to 45s. White lead: £16. Red unchanged. Venetian red: £6. to £10. Cobalt: Prepared 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; 10., £10.; finest, £20. Zinc oxide: £22. 10s. to £25.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—Cotton and linseed oils are fast nearing each other in the matter of valuation, but in little improved positions upon those quoted a few weeks ago, and there is little prospect of any advance being sudden and permanent. The imports to date, compared with the same time a year ago, have been: linseed, 443,734 qrs., against 561,296 qrs.; cottonseed, 130,619 tons, against 108,598 tons; oilcake, 7,488 tons against 9,748 tons; rapeseed, 59,995 qrs., against 71,247 qrs.; olive oil, 3,289 tons against 4,505 tons. Tar, 8,632 barrels against 14,887 barrels. Linseed oil closes flat at 14s. 9d. per cwt., spot, naked; Sept.-Dec., 14s. 10½d., the same being about value to April. Refined and boiled, £1. to £1. 10s. per ton extra. Refined cotton oil easier, quoted spot naked 14s. 6d. per cwt., and fairly steady thereat; forward, Nov.-April, 14s. 4½d. Filtered refined oil £1. per ton extra. Casks £1., and ordinary barrels £1. 10s. per ton extra. Olive oil quiet, and little prospect of securing advanced rates in the face of such a quiet demand from manufacturers in the West Riding: £30. to £32., according to origin. Castor oil held firmly for advanced rates; first pressure English, 3¾d. per lb.; second pressure English, 3¾d. per lb. in barrels free. Olive oil soaps from £16. 10s. per ton. Cod oils, £15. to £18. per ton. Turpentine, 22s. 9d. per cwt. Stockholm tar shows an advance of 1s. per barrel, and quoted 22s. 6d. per barrel.

CAKES.—Linseed cakes firm, 95% pure, £7. 2s. 6d. to £7. 5s. per ton. Oilcakes, £6. 5s.; Russians, £7. 2s. 6d.; Americans, £6. 12s. 6d. to £6. 15s. Cotton cakes: Best makes, £4. 7s. 6d. to £4. 10s.; seconds £4. 2s. 6d. to £4. 5s. per ton. Black Sea rape cakes, £4. 5s. to £4. 7s. 6d. nominal.

PAINTS.—Yellow ochre, Venetian red, oxide of iron in oil, from £9. per ton. Ready-mixed paints still move freely, £22. up. Dry mineral colours, £3. to £8. per ton. Imperial black varnish, £5. 10s. per ton. Barrels free.

TYNE CHEMICAL REPORT.

TUESDAY.

There is no change to report in the position of the chemical market. Caustic is perhaps a shade firmer all round. Bleaching powder is quoted at £6. 5s. to £6. 10s. per ton. Sulphur £5. per ton. Soda crystals £2. 12s. 6d. per ton, gross weight, locally.

Bleaching powder, softs, £6. 10s. per ton, nett; hards, £6. 15s. per ton, nett; caustic soda, 70% £7. 10s., and 76/77% £9. per ton; recovered sulphur, 2 cwt. bags, £5. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do, 50%, £4. 12s. 6d. per ton, nett; do, 52%, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do, 50%, £5. 5s. per ton, nett; do, 52%, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do, 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do, 100° Tw., £3. per ton, nett; do, 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do, 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do, 90/95% crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—Continues firm at 9s. 6d. per ton, f.o.b. Tees.

COALS.—The general tone of the market is firm, and there is a good inquiry for gas coals, and large shipments are being made. To-day's quotations: Best Northumbrian steam, 8s. 6d. to 9s. per ton; second qualities, 7s. 6d. to 8s. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; gas coals, 7s. 9d. to 8s. 3d. per ton; bunker coals, 7s. 9d. to 8s. per ton; coke, firm, 20s. to 21s. per ton.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

The most changeable feature in the market is still that appertaining to sulphate of ammonia. This article keeps steadily on the side of improvement, and the prompt price to-day must be set down at from £8. 2s. 6d. to £8. 5s., f.o.b. Leith. There may be a holder willing to part at the lower price, but the most of them have ideas distinctly above that. Sellers' views as to forward dealing have got rather big (from 7s. 6d. to 10s. advance on prompt), but so far buyers decline to follow, and forward business is again a blank. The rest of the chemicals remain fairly steady at about the old prices. Soda crystals and caustic soda are scarce as before, but without change of prices. Baltic shipments will be taking off soon for the usual winter closure. Paraffins are all as before, except paraffin spirit, which is stronger, and price very firm.

Chief prices current are:—Soda crystals, £2. 12s. 6d., nett, Tyne, soda ash, 48/62°, £4. 2s. 6d. to £4. 15s. nett, Tyne; white alkali,

48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £4. 17s. 6d. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 5s., 70/72° £7. 10s., 60/62° £6. 10s., and cream 60/62° £6. 5s. all nett, Liverpool; bleaching powder, 35/37°, £6. 5s. nett, Tyne; saltcake, 19s. to 20s.; borax, English, refined, £14. 15s. and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4d. less 5%, any port; nitrate of soda, 7s. 4½d. to 7s. 9d.; sulphate of ammonia, £8. 2s. 6d. to £8. 5s. prompt, f.o.b. Leith; salammoniac, first and second white, £33. and £31. nett any port; sulphate of copper, £16. 5s. 6d. to £16. 7s. 6d., less 5% Liverpool; paraffin scale, hard, 1¼d. to 1½d., per lb.; paraffin wax, 120° semi-refined, 1¼d. to 2d. per lb.; paraffin spirit (naphtha), 6½d. per gallon; paraffin oil (burning), No. 1, 5¼d., and crystal, 6d., at Glasgow and other big centres, for Scotch buyers (English sales a shade lower); ditto (lubricating) 865° £5. to £5. 5s., 885° £5. 15s. to £6. 5s., and 890/895° £6. 10s. to £7. Week's imports of sugar at Greenock were *nil*.

New Companies.

Airedale Varnish Co., Ltd.—CAPITAL £3,000. in £1. shares. This company has been formed to carry on the business of varnish, paint, and colour manufacturers and dealers. The number of directors is to be 3; the first are T. Andrew, J. Laycock, and T. Greenwood.

Frontero Manganese Co., Ltd.—CAPITAL £88,000. in £1. shares. This company has been formed to adopt an undescribed agreement and to acquire, own, and work certain manganese mines and mineral properties in the Province of Burgos, Spain. The subscribers to the memorandum of association are:—A. E. Williams, Vestry House, Laurence Pountney Hill, E.C., solicitor; W. R. Smith, 61, Clifden-road, Clapton Park, N.E., clerk; F. A. Stonier, 73, Haberdasher-street, East-road, N., clerk; S. D. Holmes, 45, Ramsay-road, Forest Gate, E., accountant; G. H. Hurrell, 14, Millbrook-road, Brixton,

S.W., clerk; A. Orchard, 100, Harrow-road, Leytonstone, E., clerk; F. W. London, Vestry House, Laurence Pountney Hill, E.C., clerk.

Robert Fletcher and Son, Ltd.—CAPITAL £150,000 in £10. shares. This company has been formed to acquire and carry on the business of paper and vitriol manufacturers, merchants, and commission agents carried on by J. R. Fletcher and J. Fletcher at Stoneclough (Lancs.), Manchester, London, Paris, and elsewhere, as "Robert Fletcher and Son," and to enter into a certain agreement. The subscribers to the memorandum of association are:—J. R. Fletcher, The Uplands, Whitefield, paper maker; J. Fletcher, Kearsley Vale House, Stoneclough, paper maker; Miss E. Fletcher, Kearsley Vale House, Stoneclough; Mrs. E. Fletcher, The Uplands, Whitefield; H. S. Grimshaw, The Mount, Accrington, architect; A. T. Holden, 20, Mawdsley-street, Bolton, solicitor; A. R. Rogerson, Chancery-place, Manchester, solicitor.

Standard Glazed Brick Co., Ltd.—CAPITAL £75,000. in £1. shares. This company has been formed to adopt an agreement with E. J. Mills, and to manufacture, sell, and deal in bricks, tiles, pottery, earthenware, sanitary ware, etc. The subscribers to the memorandum of association are:—W. A. Gibson, 4, Queen Victoria-street, E.C., engineer; T. Heard, 66, Freegrove-road, N.W., gentleman; C. T. Webb, 136, Queen Victoria-street, E.C., draper; F. H. Paley, 25-35, New Broad-street, E.C., merchant; H. A. Watson, 25-35, New Broad-street, E.C., cashier; R. N. Walker, 57, Moorgate-street, E.C., clerk; J. N. Thornley, 57, Moorgate-street, E.C., clerk.

Walker, Wallis and Co., Ltd.—CAPITAL £10. in £10. shares. This company has been formed to acquire the business carried on by J. B. Walker and G. L. Wallis, at Wellington Works, Hull, as "Walker and Co.," to enter into a certain agreement, and to manufacture, import, export, and deal in soaps, blues, blacklead, metal polish, starch, etc. The subscribers to the memorandum of association are:—J. B. Walker, Lair Gate House, Beverley, soap manufacturer; G. L. Wallis, 2, Crown-terrace, Anlaby-road, Hull, soap manufacturer; F. H. Harrison, J.P., White Hall, Lincoln; H. Walker, M.D., Lair Gate House, Beverley; Mrs. E. A. Wallis, 2, Crown-terrace, Hull; W. R. Harrison, M.I.M.E., Paragon Chambers, Hull; M. Bilton, Paragon Chambers, Hull, valuer. Registered office, 26, Wellington-street, Hull.

IMPORTS OF CHEMICAL PRODUCTS

AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending September 17th.

Acetate of Lead — France, 10 cks. F. Smith	E. Indies, 134	J. W. Cook & Co.
Acetic Acid — Holland, 47 pks. Little & Johnston	Zanzibar, 51	L. & I. D. Jt. Co.
Acetone — Germany, 4 brls. Matthews & Luff	Singapore, 273	Rogers Bros.
Acids — Belgium, 20 pks. John Cockerill Line	Zanzibar, 170	L. & I. D. Jt. Co.
Alkali — Belgium, 440 c. W. G. Jacobs	Germany, 120	E. Boustead & Co.
Antimony — N. Zealand, 4 t. Major & Field	Austria, 15 cs. M. D. Co.	T. H. Lee
Antimony Ore — Japan, 25 t. J. Swire & Sons	E. Indies, 16 cks. J. W. Cook & Co.	
Arsenic — Portugal, 69 cks. Coverley & Westray	France, 47	Cayzer, Irvine & Co.
Asbestos — Italy, £41 Imp. Asbestos Co.	France, 30 brls. Beresford & Co.	
Barytes — Holland, 22 cks. E. J. Diggins	E. Indies, 25 pks. F. Boehm	
Bleaching Soda — Belgium, 44 J. L. Lyon & Co.	E. Indies, 100 cs. Dundee, Perth, & L. S. Co.	
Bone Meal — Germany, 200 cs. H. Lamber	Caustic Potash — France, 13 pks. Petri Bros.	
Boracic Acid — Germany, 10 pks. H. Lorenz	Belgium, 50	A. B. Curtis
Camphor — Japan, 70 tubs. S. Figgis & Co.	Chemicals (otherwise undescribed)	T. H. Lee
Caoutchouc — Singapore, 46 c. S. Figgis & Co.	Germany, £250	A. & M. Zimmermann
	Holland, 22	John Cockerill Line
	Spain, 8 cks. W. C. Bacon & Co.	T. Palmer
	France, 15	Craven & Co.
	U. States, 28 cs. Lunham & Moore	Typke & King
	Germany, 50 bgs. R. G. Hall & Co.	H. Lorenz
		R. W. Greeff & Co.
		T. Palmer
		L. & I. D. Jt. Co.
		Phillips & Graves
		M. Bencher
		Fuerst Bros.
		H. Lambert
		H. Ulrich
		Mory & Co.
		Sydney, 1,472 bgs. Hore & Scrivener
		Copper Sulphate — Germany, 36 cks. Charles & Fox
		Cream of Tartar — Spain, 8 cks. W. C. Bacon & Co.
		France, 15
		U. States, 28 cs. Lunham & Moore
		Germany, 50 bgs. R. G. Hall & Co.

Dyestuffs—

Aniline		
Belgium, 9 pks. W. Gerson & Co.		
Holland, 27 Hernu, Peron & Co.		
Argois		
Italy, 28 cks. Thames S. T. & L. Co., Ltd.		
France, 369 bgs. B. Jacob & Sons		
Cochineal		
Canaries, 4 bgs. Sperling & Williams		
" 10 Hendrey & Martin		
Cutch		
Belgium, 100 cs. Becker & Wagner		
Extracts		
Denmark, 1 cs. Masters Bros.		
France, 25 cks. L. J. Levinstein & Sons		
U. States, 20 Williams, Torrey & Co.		
France, 65 B. & F. W. Co.		
Fustic		
B. W. I., 95 t. Park, Macfadyen & Co.		
Gambier		
S'gapore, 1,925 bls. R. & J. Henderson		
" 225 154 bgs. J. Swire & Sons		
" 460 bgs. Beresford & Co.		
" 1,238 bls. L. & I. D. Jt. Co.		
Germany, 1 Brown & Elmslie		
Singapore, 544 bgs. Hicks & Ashmore		
" 995 Adamson, Gillilan & Co.		
Indigo		
Belgium, 2 cts. John Cockerill Line		
E. Indies, 5 R. Von Glehn & Sons		
" 67 L. & I. D. Jt. Co.		
" 2 Park, Macfadyen & Co.		
" 4 Arbuthnot, Latham & Co.		
Holland, 10 L. & I. D. Jt. Co.		
Logwood		
B. W. I., 60 t. Park, Macfadyen & Co.		
Naphthaline		
Germany, 7 cks. Landstöff & Meyer		
" 29 Fleming's Oil & Chemical Co.		
Ochella		
Zanzibar, 12 bls. Major & Field		

Saffron

Spain, 1 cs. Richardson, Spence & Co.	
" 1 J. Mallet	

Shumac

Italy, 1,000 bgs. A. Slater & Co.	
" 575 J. W. Cook & Co.	
" 200 sks. Girard Bros. & Co.	

Tanners' Bark

Melbourne, 20 t. Union Ldg. Co.	
Holland, 40 Little & Johnston	
" 42 Hicks, Nash & Co.	
Belgium, 30 Ldn. Til. L. Co.	
" 23 T. & H. Wiles	

Valonia

A. Turkey, 40 t. Bouchet, Mortimore & Co.	
Dyestuffs (otherwise un-specified)	
France, 40 cks. Gellatly, Hankey & Co.	

Farina—

Belgium, 100 bgs. Dunlop Bros. & Co.	
" 210 T. H. Lee	
Holland, 50 J. Knill & Co.	
" 100 R. Bennett & Co.	
" 100 H. Lane	

Gamboge—

Singapore, 19 cs. L. & I. D. Jt. Co.	
Glucose —	
U. States, 250 pks. 250 c. Bellamy's Wt. Co.	
" 3,000 3,000 E. Thompson & Co.	
" 500 3,000 Deering & Robinson	
" 1,000 1,000 L. & I. D. Jt. Co.	
" 750 750 Humphrey & Co.	
France, 200 200 J. Parson & Co.	
U. States, 700 700 Morton & Co.	
Belgium, 24 140 J. Barber & Co.	
U. States, 1,047 2,230 R. G. Hall & Co.	
Germany, 20 19 M. D. Co.	

Glue—

France, £16 Mory & Co.	
Germany, 31 Phillips & Graves	
Holland, 93 Carey & Sons	
Belgium, 180 J. Barber & Co.	

Germany, 260	L. & I. D. Jt. Co.
Holland, 46	G. Rahn & Co.
France, 135	J. Harrison
U. States, 50	Staveley & Co.
Infusorial Earth —	
Germany, £20	Invicta Ash. Co.
" 10	C. Webster
" 20 t.	A. Haacke & Co.
Lamp Black —	
U. States, 150 brls.	L. & I. D. Jt. Co.
Manure —	
E. Indies, 150 t.	A. Hunter & Co.
Sydney, 6	Low, Sons, & Co.
Germany, 50	D. de Pass & Co.
" 16	F. W. Berk & Co., Ltd.
Belgium, 10	J. G. Back
Methyl Alcohol —	
U. States, 50 brls.	H. G. Brown
Holland, 12 dms.	W. S. Barber
Germany, 7	T. Jones & Co.
Mica —	
E. Indies, £61	L. & I. D. Jt. Co.
" 64	F. Claydon & Co.
" 500	Wrightson & Son
" 208	W. M. Smith & Sons
" 210	E. Davis & Co.
Molasses —	
U. States, 250 pks.	1,400 c. Tilby & Co.
Ochre —	
China, 60 brls.	Vokins & Co., Ltd.
Holland, 4 pks.	6 cs. Philipps & Graves
France, 30 cks.	J. Kitchin, Ltd.
" 160	W. Harrison & Co.
Pitch —	
Belgium, 75 brls.	H. Hunt
Holland, 5 cks.	Poth. Hille, & Co.
N. Russia, 200 brls.	Hoar, Marr, & Co.
Germany, 5	C. F. Gerhardt
Plumbago —	
Ceylon, 403 cks.	J. Thredder, Son, & Co.
U. States, 5	L. & I. D. Jt. Co.
Ceylon, 47	Elkan & Co.
Germany, 60	J. Thredder, Son, & Co.
Potash —	
Germany, 40 cks.	L. & I. D. Jt. Co.
Potassium Carbonate —	
France, 110 c.	J. A. Reid
Belgium, 200	Petri Bros.
Potassium Permanganate —	
Germany, 40 cks.	H. Lorenz
Pyrites —	
Portugal, 932 t.	Mason & Barry
Spain, 2,114	C. Tennant, Sons, & Co.
Quicksilver —	
N. Russia, 308 brls.	L. & I. D. Jt. Co.
Rosin —	
U. States, 200 brls.	T. Nickels & Co.
" 4,953	Fairclough, Dodd, & Jones
" 500	Prod. Brokers' Co.
France, 13	B. & F. Wf. Co.
U. States, 798	F. & S. Chiesman & Co.
Rosin Oil —	
France, 100 brls.	A. Brown & Co.
Salicylic Acid —	
Germany, 2 pks.	H. Lorenz
Saltpetre —	
E. Indies, 1,785 bgs.	Lucas & Spencer's
Germany, 5 cks.	L. & I. D. Jt. Co.
Soda —	
Belgium, 1,200 c.	R. Waters
Germany, 70	L. & I. D. Jt. Co.
Sodium Acetate —	
France, 280 bgs.	J. Harrison
Sodium Sulphate —	
Germany, 100 bgs.	Deering & Robottom
Starch —	
Germany, 50 cs.	Phillipps & Graves
Holland, 2,480	Little & Johnston
U. States, 250 bgs.	C. Tennant, Sons, & Co.
Belgium, 210 cs.	Leach & Co.
" 800	E. & T. Pink
" 2,821	T. H. Lee
" 80	Taylor Bros.
U. States, 300 bgs.	R. Warner & Co.
Germany, 1,550 cs.	Horne & Co.
Holland, 40	Phillipps & Graves
" 50	Hernu, Peron, & Co.
Germany, 200	C. Tennant, Sons, & Co.
Belgium, 120	Becker & Wagner
Holland, 1,000	A. Starck
France, 530	E. & T. Pink

Stearine —	
U. States, 192 bgs.	H. Hill & Sons
France, 20	B. & F. Wf. Co.
Talc —	
France, £80	Blackwell & Co.
Tar —	
N. Russia, 2,108 brls.	Hoare, Mann, & Co.
Tartaric Acid —	
Belgium, 13 pks.	F. C. Devon & Co.
Germany, 16	B. & F. Wf. Co.
Holland, 11	W. M. Smith & Sons
" 5	F. C. Devon & Co.
" 5	G. Rahn & Co.
France, 8	B. & F. Wf. Co.
Holland, 17	Kirkpatrick & Co.
Ultramarine —	
Holland, 5 cs.	J. Barber & Co.
Germany, 1 ck.	T. Hamilton & Co.
Belgium, 24	W. Harrison & Co.
Germany, 2 cks.	Steinhoff, Sons, & Co.
Varnish —	
U. States, 6 pks.	Dawson Bros.
France, 1	Burnett Bros. & Sons
Germany, 25	T. H. Lee
Verdigris —	
France, 4 cks.	C. F. Gerhardt
White Lead —	
Holland, 48 cks.	T. & W. Farmiloe, Ltd.
Belgium, 48	W. Balchin
Holland, 60	Burrell & Co.
Germany, 24	Pinchin, Johnson, & Co.
Belgium, 25	W. A. Hampton
Germany, 24	D. Storer & Sons
Wood Pulp —	
Sweden, 3,840 pks.	Henderson, Craig, & Co.
Norway, 4,922	London Paper Mill Co.
Sweden, 50	H. Johnson & Sons
Norway, 488	W. G. Taylor & Co.
Sweden, 1,488	London Paper Mill Co.
Germany, 406	W. Friedlaender
Sweden, 272	C. S. Lovell
Norway, 960	W. D. Cook
Portugal, 250	Tough & Henderson
" 250	Page, Son, & East
Canada, 3,910	E. J. & W. Goldsmith
" 10	Henderson, Craig, & Co.
" 1,858	W. D. Cook
" 1,983	Dominion Pulp Co.
" 48	Becker & Cole
Germany, 400	Christophersen, Andrews, & Co.
Zinc Oxide —	
U. States, 15 brls.	A. C. Lloyd
Germany, 500 cks.	Soundy & Sons
" 10	R. W. Greeff & Co.
" 100 brls.	W. Balchin, Ltd.

LIVERPOOL.

Week ending September 9th.

Acetic Acid —	
Rotterdam, 17 balloons	
Barytes —	
Rotterdam, 20 cks.	
Boracic Acid —	
Leghorn, 25 cks.	
Borate of Lime —	
New York, 2,238 bgs.	
Borax —	
Valparaiso, 650 sks.	
Caoutchouc —	
Bordeaux, 3 cks.	2 cs. Cunard
Havre, 7 pks.	116 S. S. Co., Ltd.
Castor Oil —	
Calcutta, 328 cs.	Ralli Bros.
" 473	J. J. Mack & Sons
Marseilles, 34 brls.	
Chemicals (otherwise undescribed)	
Rotterdam, 55 cs.	
Citric Acid —	
Messina, 16 cks.	
Cod Oil —	
St. John's, Nfld., 320 cks.	J. J. Langley
Cream of Tartar —	
Bordeaux, 32 cks.	
Oporto, 5	
Barcelona, 5 pks.	

Dyestuffs—	
Cochineal	
Gd. Canary, 24 bgs.	Kennedy & Moon
" 10	Canary Islands Trading Co.
" 10	Kukner Henderson
Cutch	
Singapore, 600 bxs.	
Fustic	
Tampico, qty.	
Gambier	
Singapore, 8,104 bls.	170 bgs.
Saffron	
Valencia, 1 cs.	
Shumac	
Palermo, 1,580 bgs.	
Gelatine —	
Bremen, 1 cs.	
Glucose —	
New York, 100 brls.	
Glue —	
Bordeaux, 1 bl.	
Limestone —	
Antwerp, 1 cs.	
Manganese Ore —	
Bordeaux, qty.	
Manure —	
Bordeaux, 2 cs.	
Mineral White —	
Bordeaux, 50 kgs.	
Molasses —	
N. Orleans, 1,000 brls.	
Ochre —	
Marseilles, 25 cks.	317 brls.
Paint —	
Boston, 3 cs.	W. Messery
Paraffin Scale —	
New York, 473 brls.	Thompson & Bedford
Baltimore, 100 brls.	
Phosphate Rock —	
Pt. Royal, 2,750 t.	
Philadelphia, 100 brls.	
Pitch —	
Marseilles, 50 brls.	
Potassium Prussiate —	
Havre, 8 cks.	Cunard S. S. Co. Ltd.
Pumice Stone —	
Leghorn, 27 cks.	
Messina, 80 brls.	30 bgs.
Pyrites —	
Huelva, 1,960 t.	Matheson & Co.
" 1,739	5 c. Ste
"	Anonyme des mines de Curvie Tinto et Santo Rosa
Rosin —	
Pt. Royal, S.C., 5,201 brls.	
New York, 451 brls.	
Soap —	
New York, 1,000 bxs.	63 crts.
Marseilles, 175	105 cs.
Leghorn, 120	
Soapstone —	
Bordeaux, 200 bgs.	Geo. G. Blackwell, Sons & Co.
Starch —	
Boston, 100 bgs.	
Bremen, 30 cs.	
Rotterdam, 72	
Sulphur —	
Catania, 134 cks.	50 bgs.
Sulphuric Acid —	
Hamburg, 2 cs.	
Tallow —	
Boston, 630 brls.	
Tartaric Acid —	
Hamburg, 8 cks.	
Rotterdam, 9	
Waste Salt —	
Hamburg, 100 t.	1,516 bgs.
White Lead —	
Rotterdam, 46 cks.	
Wood Pulp —	
Halifax, 100 bndls.	T. Owen & Co.
Boston, 343 crts.	Lever Bros.
" 260 bls.	82 bndls.
Montreal, 300	H. Rice
Rotterdam, 146	
Zinc Oxide —	
Rotterdam, 140 cks.	J. Mathews & Co.
Zinc White —	
Rotterdam, 50 cks.	

MANCHESTER.

Week ending September 11th.

Alizarine —	
Rotterdam, 135 brls.	
Ammonia —	
Rotterdam, 20 cs.	
Aniline Salts —	
Rotterdam, 4 cks.	
Barytes —	
Antwerp, 150 bgs.	
Beta-Naphthol —	
Rotterdam, 3 cks.	
Caustic Potash —	
Hamburg, 13 dms.	
Chemicals (otherwise undes.) —	
Rotterdam, 14 cks.	
Colours —	
Antwerp, 10 cks.	J. T. Fletcher & Co.
" 18 pks.	
Rotterdam, 85	8 cs.
Boulogne, 3	2
Farina —	
Rotterdam, 1,800 bgs.	
Gelatine —	
Hamburg, 18 cs.	
Glue —	
Hamburg, 15 bskts.	
Rotterdam, 7 cs.	
Limestone —	
Antwerp, 7 crts.	
Mineral White —	
Bordeaux, 80 bgs.	
Oxalic Acid —	
Rotterdam, 36 cks.	
Pitch —	
Hamburg, 40 cks.	
Potash —	
Rotterdam, 25 cks.	
Potassium Chloride —	
Hamburg, 20 cks.	
Soap —	
Bordeaux, 8 cs.	
Soda —	
Antwerp, 6 cks.	
Starch —	
Hamburg, 448 cs.	
Antwerp, 240	
Rotterdam, 171	
Stearine —	
Antwerp, 20 bgs.	
Tannic Acid —	
Rotterdam, 4 cks.	
Tartar —	
Bordeaux, 3 cks.	
Tartaric Acid —	
Rotterdam, 15 cks.	
Ultramarine —	
Rotterdam, 23 cs.	
Waste Salt —	
Hamburg, 520 sks.	
White Lead —	
Antwerp, 8 cks.	
Wood Pulp —	
Hamburg, 180 bndls.	
Rotterdam, 303	
Zinc White —	
Rotterdam, 14 cks.	

HULL.

Week ending September 11th.

Acids —	
Leghorn, 12 cks.	Wilson, Sons, & Co., Ltd.
Rotterdam, 43 blns.	W. & C. L. Ringrose
Albumen —	
Libau, 10 cs.	Bailey & Leatham, Ltd.
Aniline Salts —	
Amsterdam, 4 cks.	Hutchinson & Son
Antimony —	
Leghorn, 20 cks.	Wilson, Sons, & Co., Ltd.
Asbestos —	
Antwerp, 38 pks.	Bailey & Leatham, Ltd.
Genoa, 2 cs.	
Barytes —	
Amsterdam, 46 cks.	Hutchinson & Son
Antwerp, 162	Bailey & Leatham, Ltd.
Bremen, 18	G. Holmes & Co.

Bone Meal— Kurrachee, 4,000 bgs.	
Camphor— Hamburg, 2 cks.	Wilson, Sons, & Co., Ltd.
Carbolic Acid— Amsterdam, 55 cks.	W. & C. L. Ringrose
Castor Oil— Leghorn, 6 cs.	Wilson, Sons, & Co., Ltd.
Chemicals (otherwise undescribed) Hamburg, 21 cks.	Wilson, Sons, & Co., Ltd.
Antwerp, 176 pkts.	"
Dunkirk, 35 cks.	"
Bremen, 2 cs.	Veltmann & Co.
Rotterdam, 1 brl.	"
Chrome Alum— Rotterdam, 2 brls.	
Cod Oil— Christiansund, 45 cks.	Wilson, Sons, & Co., Ltd.
Genoa, 60 cs.	"
Colours— Rotterdam, 2 cks.	Hutchinson & Son
" 93 pkts.	W. & C. L. Ringrose
Antwerp, 3	Bailey & Leatham, Ltd.
" 31	Wilson, Sons, & Co., Ltd.
Leghorn, 0 cs.	"
Stettin, 36	"
Hamburg, 8	"
Danzig, 4	Veltmann & Co.
Bremen, 5	"
Rotterdam, 38	"
Copperas— Bremen, 10 cks.	
Cottonseed Oil— New York, 31 brls.	Wilson, Sons, & Co., Ltd.
Dyestuffs— Alizarine Rotterdam, 104 brls.	
Indigo Rotterdam, 5 cts.	Hutchinson & Son
Tanners' Bark Ghent, 142 bgs.	Hutchinson & Son
Farina— Hamburg, 20 bgs.	Wilson, Sons, & Co., Ltd.
Stettin, 85	"
Harlingen, 100 bls.	W. & C. L. Ringrose
" 500 cs.	"
" 150 bls.	"
" 10 bgs.	Wilson, Sons, & Co., Ltd.
Dunkirk, 50	"
Glucose— Rotterdam, 10 bgs.	W. & C. L. Ringrose
Glue— Antwerp, 4 bls.	Bailey & Leatham, Ltd.
Dunkirk, 10 cks.	Wilson, Sons, & Co., Ltd.
Kaolin— Rotterdam, 121 bgs.	Hutchinson & Son
Amsterdam, 2	"
Rotterdam, 120	Reckitt & Sons
Linseed Oil— Amsterdam, 150 brls.	Hutchinson & Son
Lithopone— Amsterdam, 20 cks.	Hutchinson & Son
Naphtha— Kiga, 96 cks.	Wilson, Sons, & Co., Ltd.
Ochre— Marseilles, 5 brls.	Wilson, Sons, & Co., Ltd.
" 132 cks.	"
Rotterdam, 4	W. & C. L. Ringrose
Paint— Christiania, 43 pkts.	
Paraffin Wax— New York, 75 brls.	Wilson, Sons, & Co., Ltd.
Phosphate— Gher t, 20 t.	

Pitch— Archangel, 438 brls.	
Potash— Dunkirk, 102 cks.	Wilson, Sons, & Co., Ltd.
Pumice Stone— Leghorn, 160 pkts.	Wilson, Sons, & Co., Ltd.
Quicksilver— Hamburg, 5 brls.	Wilson, Sons, & Co., Ltd.
Soap— Rotterdam, 17 cs.	Hutchinson & Son
Marseilles, 25	Wilson, Sons, & Co., Ltd.
Naples, 8	"
New York, 800 bxs.	"
Soda— Antwerp, 174 bgs.	Bailey & Leatham, Ltd.
Starch— Ghent, 254 cs.	Wilson, Sons, & Co., Ltd.
Antwerp, 20	Bailey & Leatham, Ltd.
Libau, 1	Helmings & Son
Ghent, 100	Hutchinson & Son
Antwerp, 38	Wilson, Sons, & Co., Ltd.
Bremen, 3,356	Veltmann & Co.
Rotterdam, 630 pkts.	Hutchinson & Son
Stearine— Copenhagen, 67 bgs.	Wilson, Sons, & Co., Ltd.
Antwerp, 65	"
Tallow— Dunkirk, 154 cks.	Wilson, Sons, & Co., Ltd.
Tar— Archangel, 1,087 brls.	Wilson, Sons, & Co., Ltd.
Stockholm, 600	"
Tar Oil— Archangel, 36 brls.	
Tartaric Acid— Rotterdam, 3 cks.	Hutchinson & Son
Ultramarine— Rotterdam, 11 cks.	Hutchinson & Son
White Lead— Amsterdam, 95 cks.	Hutchinson & Son
Rotterdam, 66	W. & C. L. Ringrose
Amsterdam, 27	"
Wood Pulp— Bergen, 218 pkts.	Wilson, Sons, & Co., Ltd.
Hamburg, 160	Bailey & Leatham, Ltd.
Stettin, 100	Wilson, Sons, & Co., Ltd.
Abo, 21 bls.	J. Good & Sons
New York, 266 rolls	Wilson, Sons, & Co., Ltd.
Zinc White— Rotterdam, 8 cks.	Hutchinson & Son

GLASGOW.

Week ending September 16th.

Alkali— Rotterdam, 20 cks.	J. Rankine & Son
Barytes— Hamburg, 200 bgs.	
Rotterdam, 173 cks.	J. Rankine & Son
Bone Meal— Nantes, 268 bgs.	
Boracic Acid— Leghorn, 9 cks.	
Caoutchouc— Hamburg, 16 cs.	
Castor Oil— Marseilles, 138 cks.	
Chemicals (otherwise undescribed) Hamburg, 1 cs.	
Chrome Alum— Rotterdam, 15 brls.	J. Rankine & Son
Cobalt Ore— Noumen, 73 t.	Nickel Co.

Colours— Rotterdam, 140 pkts.	J. Rankine & Son
Hamburg, 6 cs.	
Dyestuffs— Alizarine Rotterdam, 6 cks.	J. Rankine & Son
1 bx. 18 brls.	"
Aniline Amsterdam, 1 ck.	
Rotterdam, 1	4 cs J. Rankine & Son
Aniline Colours Amsterdam, 4 cks.	
Hamburg, 1	
Extracts Noumen, 70 brls.	
Antwerp, 1 ck.	
Indigo Rotterdam, 6 cts.	J. Rankine & Son
Farina— Delfsryhl, 107 bgs.	
Glue— New York, 2 brls.	
Rouen, 9 cks.	50 cs J. Rankine & Son
Rotterdam, 10 cts.	"
Gypsum— Rouen, 400 bgs.	
Lamp Black— New York, 100 brls.	
Mineral White— Rotterdam, 1 ck.	J. Rankine & Son
Nickel Ore— Noumen, 3,531 t.	Nickel Co.
Ochre— Baltimore, 233 brls.	
Oxalic Acid— Rotterdam, 12 cks.	J. Rankine & Son
Paraffin Wax— Baltimore, 600 brls.	
Phosphate— Antwerp, 506 bgs.	
Pitch— Archangel, 200 brls.	Young, Falconer & Co.
Potash— Hamburg, 10 cks.	
Pumice Stone— Rotterdam, 5 cs.	J. Rankine & Son
Pyrites— Huelva, 1,776 t.	Tharsis Co.
Rosin— New York, 500 brls.	
Huelva, 2,001 t.	Tharsis Co.
Soap— Rotterdam, 6 cs.	J. Rankine & Son
New York, 65 brls.	
Noumen, 650	
Sodium Acetate— Rouen, 11 cks.	
Antwerp, 16	
Sodium Nitrate— Hamburg, 32 bgs.	
Starch— Noumen, 900 bxs.	
Stearine— Rotterdam, 16 cks.	J. Rankine & Son
Tallow— New York, 6 tcs.	
Baltimore, 100	
Tar— Archangel, 1,087 brls.	Young, Falconer & Co.
Tar'ar— Oporto, 4 cks.	
Tartaric Acid— Marseilles, 2 cs.	
Varnish— Antwerp, 1 ck. 7 tins	
Waste Salt— Hamburg, 616 cks.	
White Lead— Rotterdam, 48 pkts.	J. Rankine & Son
Christiania, 41 cks.	
Whiting— Rouen, 25 cks.	
Wood Pulp— Hamburg, 303 bls.	130 brls.
Rotterdam, 10 pkts.	J. Rankine & Son
Oporto, 750 bls.	
Christiania, 1,120	14 cs.

Zinc Oxide— Noumen, 100 brls.	
Zinc White— Rotterdam, 25 pkts.	J. Rankine & Son

TYNE.

Week ending September 11th.

Alum Earth— Hamburg, 25 cks.	Tyne S. S. Co.
Barium Chlorate— Rotterdam, 350 bgs.	Tyne S. S. Co.
Barytes— Antwerp, 300 bgs.	Tyne S. S. Co.
Colours— Hamburg, 4 cks.	Tyne S. S. Co.
Rotterdam, 10	"
Limestone— Antwerp, 3 crts.	Tyne S. S. Co.
Pitch— Archangel, 100 brls.	
401 cks.	
Quicksilver— Copenhagen, 100 cydres.	
Saltetre— Hamburg, 14 cks.	Tyne S. S. Co.
Starch— Rotterdam, 132 cs.	Tyne S. S. Co.
Tar— Archangel, 7,293 brls.	
Tar Oil— Archangel, 200 cks.	
Wood Pulp— Christiania, 700 bls.	

GOOLE.

Week ending September 8th.

Alizarine— Rotterdam, 32 brls.	1 bx.
Alkali— Calais, 17 cks.	
Aniline Dyes— Rotterdam, 308 cks.	102 cs. 1 pk.
Chemicals (otherwise undescribed) Hamburg, 6 cs.	
Dyestuffs (otherwise undescribed) Boulogne, 5 cks.	11 pkts.
Amsterdam, 3	
Glucose— Hamburg, 70 cks.	
Lead Acetate— Hamburg, 17 cks.	
Potash— Calais, 20 drs.	
Saltpetre— Rotterdam, 200 bgs.	
Hamburg, 3 brls.	
Tartaric Acid— Rotterdam, 1 ck.	
Waste Salt— Hamburg, 303 brls.	
Wolfram Ore— Hamburg, 3 cs.	
Wood Pulp— Hamburg, 160 pkts.	

GRIMSBY.

Week ending September 11th.

Caoutchouc— Rotterdam, 4 cs.	
Hamburg, 1	
Chemicals (otherwise undescribed) Rotterdam, 10 cks.	
Coal Tar Dyes— Antwerp, 1 cs. 25 pkts.	49
Hamburg, 49	
Colours— Hamburg, 7 cks. 2 cs.	
Rotterdam, 2	
Antwerp, 11	5 pkts.
Dyestuffs (otherwise undescribed) Dieppe, 25 cks.	
Farina— Hamburg, 500 bgs.	
Soda— Antwerp, 30 bgs.	
Zinc Ashes— Antwerp, 6 cks.	

EXPORTS OF CHEMICAL PRODUCTS

OF

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending September 15th.

Alkali —		
Rotterdam, 5 t.	£30	
Ammonia —		
Rotterdam, 25 dms.	£100	
Ammonium Carbonate —		
Paris, 1 t. 10 c.	£42	
Ammonium Chloride —		
Melbourne, 3 cks.	£20	
Genoa, 1 t.	£20	
Ammonium Sulphate —		
Rouen, 165 t. 10 c.	248	
Jersey, 30	375	
Dunkirk, 49 4	2,758	
Mauritius, 350		
Arsenic —		
Cape Town, 9 c.	£11	
Bleaching Powder —		
Pt. Elizabeth, 1 t. 12 c.	£20	
Canterbury, 1 c.	4	
Borax —		
Rotterdam, 10 cks.	£27	
Carbolic Acid —		
New York, 82 cks.	£655	
Caustic Soda —		
Sydney, 2 t. 5 c.	£54	
E. London, 37 2	44	
Pt. Elizabeth, 15	10	
Vera Cruz, 10 8	86	
Canterbury, 17	450	
Cape Town, 1 1	22	
Algoa Bay, 1 11	35	
Chemicals (otherwise undescribed)		
Adelaide, 84 dms.	£57	
Sydney, 10	10	
Invercargill, 5 cks.	11	
Rotterdam, 2 16 cs. 20 kgs	177	
Brisbane, 21 pks.	53	
Cape Town, 18	28	
Wellington, 49 t.	104	
Auckland, 129 t.	173	
Melbourne, 60 pks.	547	
Madras, 17	24	
Montreal, 4 kgs.	24	
Dunkirk, 12 t. 12 c.	600	
Antwerp, 13 16	500	
Durham, 5 1	232	
Christiania, 5 cks	60	
Halifax, 5	35	
Hamburg, 16 13 pks.	150	
Cologne, 10 11 kgs.	80	
Genoa, 20	114	
Copenhagen, 1 1 cs.	52	
Citric Acid —		
Algoa Bay, 1 c.	£6	
Natal, 10 kgs.	33	
Cape Town, 1	7	
Gothenburg, 5	22	
Amsterdam, 5	30	
Genoa, 10	60	
Fremantle, 1	7	
Calcutta, 1 cs.	4	
Calcutta, 3	18	
Coal Products —		
Alizarine		
St. Petersburg, 13	£688	
Barcelona, 13 cks.	285	
Boston, 5	54	
New York, 54	615	
Montreal, 10	116	
Alizarine Dyes		
Luxemburg, 9 cks. 3 kgs.	£141	
Aniline Oil		
New York, 30 dms.	£1,080	
Aniline Salts		
New York, 50 cks.	£380	
Anthracene		
Dusseldorf, 351 cks.	£2,058	
Benzol		
Cologne, 90 puns	£940	
Creosote		
Dieppe, 46,011 gals.	£241	
New York, 200 cks.	128	
Creosote Oil		
Boston, 200 cks.	£110	
Gasoline		
Natal, 30 dms.	£24	
Naphtha		
Treport, 26 brls.	£90	
Sydney, 25 dms.	15	

Pitch		
Hochfeld, 144 t.	£124	
Haiphong, 2 066 brls.	516	
Abo, 415 t.	475	
New York, 2,410 lbs.	130 cks. 10 brls.	408

Pyridine Bases

Antwerp, 1 ck.	£12	
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Tar

Algoa Bay, 50 dms.	£6	
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Abo, 1,500 cks.	785	
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Danzig, 350 brls.	175	
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Hamburg, 105	42	
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Riga, 200	112	
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Tar Oil

Rotterdam, 10 cks. 2 dms.	£73	
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Coal Products (otherwise undescribed)

Hobart, 20 dms.	£5	
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Copper Sulphate

Boulogne, 10 t. 1 c.	£150	
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Dunkirk, 20	332	
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Haar, 2 10	41	
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Christiania, 10	165	
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Paris, 155	2,571	
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Antwerp, 10	160	
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Disinfectants

Penang, 5 cks. 8 pks.	£88	
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Singapore, 215	90	
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Algoa Bay, 6 t. 12 c.	£179	
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Melbourne, 10 c.	£11	
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Magnesium Carbonate

Harlingen, 1 t. 1 c.	£23	
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Ghent, 44 3	22	
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Singapore, 21 5	170	
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Jersey, 216 3	170	
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Boulogne, 114	15	
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Almeida, 114	912	
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Auckland, 50	125	
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Genoa, 100	700	
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Kingston, 10	70	
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Mauritius, 95	188	
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Stettin, 68 5	170	
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Nitrous Oxide Gas

Sydney, 11 c.	£32	
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Oxalic Acid

Treport, 1 t. 10 c.	£60	
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Potassium Chlorate

Pt. Elizabeth, 30 kgs.	£51	
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E. London, 25	47	
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Potassium Cyanide

Townsville, 5 t. 5 c.	£400	
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Adelaide, 2 13	200	
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Fremantle, 2 9	200	
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E. London, 5	480	
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Saltpetre

Dunedin, 1 t. 19 c.	£43	
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Oporto, 25 bgs.	34	
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Amsterdam, 2	34	
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Sheep Dip

Napier, 130 cs.	£263	
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Auckland, 40	788	
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Pt. Elizabeth, 375 dms.	56	
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Kingston, 110	48	
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Algoa Bay, 11 t.	271	
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Delagoa Bay, 50	10	
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Natal, 20 6 c.	515	
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Soap

Hamburg, 9 t. 17 c.	£200	
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Sodium Arsenite

Algoa Bay, 5 t.	£159	
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Sodium Bicarbonate

Massawah, 5 t.	£35	
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Sodium Hyposulphite

Vera Cruz, 10 t. 19 c.	£50	
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Sodium Tartrate

Melbourne, 5 cs.	£17	
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Sodium Nitrate

Boston, 4 t. 12 c.	£108	
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Sulphur

Calcutta, 22 t. 16 c.	£85	
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Algoa Bay, 50 kgs.	18	
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Cape Town, 9 17	44	
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Sulphuric Acid

Colombo, 15 cs.	£16	
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Tartaric Acid

Hamburg, 10 c.	£62	
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Malta, 2	14	
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LIVERPOOL.

Week ending September 15th.

Acetic Acid

Passages, 13 c.	£16	
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Alum

Tacoma, 26 t. 13 c.	£133	
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Syria, 2 8	12	
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Cadiz, 2	10	
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Rabat, 2 11	12	
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Montreal, 16 17	3	
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Maranham, 1 11	7	
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Callao, 2 19	14	
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Galatz, 3 6	17	
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Madras, 20 15	114	
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Ammonia

Santander, 11 t. 8 c.	£40	
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Ammonium Carbonate

Naples, 8 c. 3 q.	£11	
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Trieste, 21	13	
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B. Ayres, 18	27	
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Copenhagen, 1 t	28	
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Leghorn, 5	7	
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Genoa, 2 10	70	
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Malaga, 3	4	
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Ammonium Chloride

Galatz, 13 c.	£24	
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Trieste, 1 t.	21	
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San Francisco, 4 12	2 q	
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Patras, 4	6	
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Barcelona, 1 8	28	
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Marseilles, 9	12	
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Alexandria, 9	279	
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Ammonium Sulphate

Las Palmas, 25 t. 12 c.	2 q	
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Ghent, 20	180	
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Valencia, 35	315	
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La Pallice, 140	1,260	
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Leghorn, 9 17	2	
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New York, 51 5	430	
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Montreal, 10 2	8	
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Madeira, 1	8	
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Oporto, 10	77	
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Teneriffe, 11	105	
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N. Orleans, 25	197	
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Cheribon, 85 2	1	
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Sourabaya, 143 7	2	
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Lisbon, 13 1	105	
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Nantes, 178 4	2	
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Bordeaux, 68 3	543	
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Arsenic

Hamburg, 5 c.	£7	
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Bleaching Powder

Baltimore, 111 cks.	20 bxs.	
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Bombay, 10 cs.	10 cs.	
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Boston, 302		
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Genoa, 181		
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Leghorn, 40		
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Lisbon, 24		
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Montreal, 85		
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Naples, 131		
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Newport News, 151		
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New York, 438		
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Oporto, 20		
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Philadelphia, 182		
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Rouen, 58		
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Santos, 30 cs.		
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Venice, 16		
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Vera Cruz, 67		
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Boracic Acid

Sydney,

Boston,	11	23 cs.	
Montreal,	20		
New York,	15		
Piræus,	5		
Rotterdam,		2 puns	
Syra,	2		
Vera Cruz,	4		
Tar			
Philadelphia,	32 t.	18 c.	
St. John's,	25 tcs.		
Toluol			
Copenhagen,	87 brls.		
Copper Sulphate—			
Rio de Janeiro,	2 t.	19 c.	£60
Hamburg,	4	18	79
Kobe,	1	5	21
Timbo,	10		9
Penang,	1	5	20
Samarang,	5	17	3 q.
St. Petersburg,	10	3	2 153
Konigsberg,	19	3	15
Gotenbourg,	2	8	2 36
New York,	1	1	17
Rouen,	15	18	1 255
Para,	3	3	5
Sydney,	5		80
Quebec,	17	3	13
Naples,	7	3	2 105
Piræus,	14	2	11
Vera Cruz,	19		14
Genoa,	14	15	221
Bari,	7	8	111
Varoa,	1		15
Konigsberg,	2	12	45
Halifax,	9		8
Danzig,	1	11	24
Talcabano,	2	10	40
Odessa,	3	2	52
Melbourne,	15	10	241
Galatz,	3		47
Calcutta,	12	10	199
Copperas—			
Gibraltar,	2 t.	12 c.	2 q. £5
Disinfectants—			
Para,		2 c.	£9
Bombay,	2 t.		13
Bahia,		19	42
Dried Blood—			
Gd. Canary,	5 t.		£26
Lime—			
Quitta,	4 t.		£10
Magnesia—			
Havre,	20 cs.		
New York,	4 cks.		
Magnesium Sulphate—			
Montreal,	40 bgs.	25 brls.	
Pernambuco,	20		
Philadelphia,		28 cs.	
Rio de Janeiro,	20 kgs.	150 dms.	
Manure—			
Honolulu,	82 t.	10 c.	£577
Gd. Canary,	20		114
Oxalic Acid—			
Newfairwater,	5 t.		£91
Stettin,	1	6 c.	39
Malta,		3	6
Boston,	13	7	366
Paint—			
Accra,	3 cks.		
Akassa,	23 brls.		
Alexandria,	10	32 kgs.	
Antofagasta,	16 cs.	185 pks.	
Axim,	4	25 dms.	
Belize,	14		
Benguella,	2	24 kgs.	
Bombay,		20	
Bordeaux,		49 pks.	
Calcutta,	2	40	
C. C. Castle,	2		
Cienfuegos,	2		
Colombo,		1 brl. 44 kgs.	
Constantinople,		131	
Gd. Bassam,		3	
Havana,	6		
Hong Kong,	3 cs.	108 dms.	
Iquitos,		50 kgs.	
Jaffa,	cks.	420	
Lagos,	7	6 dms.	
Larnaca,	21		
La Plata,		244	
Manaos,	17	50	
Monrovia,		5 cs.	
Nagasaki,	17		
Nantes,	17		
N. Orleans,	4		
New York,		63 pks.	
Pernambuco,		20 kgs.	
Rosaria,		26 pks.	
Sandy Point,	4		
Timbo,		48	
Valparaiso,	42	30	200 kgs.
Vera Cruz,	2		

Painters' Colours—			
Bahia,	50 kgs.		
Bathurst,	10		
Bilbao,		2 brls.	
Bombay,	1,292	67 cs.	
Calcutta,	5 cks.		
Hong Kong,		132 dms.	
La Plata,	32		
Las Palmas,		1 brl.	
Madras,	5 cs.		
Mayaguez,		4	
Mollendo,		7	
New York,	9	2 pks.	
Para,	8	40	8
Philadelphia,		8	36 kgs.
Ponce,	2		
Port Said,		28	
Rio de Janeiro,		10	
Sapeli,		21 dms.	
Smyrna,		60	
Valparaiso,		20 cs.	
Yokohama,		200	
Paraffin Wax—			
Ancona,	30 bgs.		
Leghorn,	55		
Rio de Janeiro,		50 brls.	
Rio Grande Do Sul,		10 cs.	
Rodosto,		10	
Rouen,		10	
Phosphate of Lime—			
Antwerp,		1 c.	£6
Phosphorus—			
Hiogo,	1 t.		£200
Picric Acid—			
New York,	4 t.	13 c.	£466
Potash—			
La Plata,		6 c.	£6
Potassium Bicarbonate—			
Singapore,		15 c.	£49
Potassium Bichromate—			
Vera Cruz,		4 c.	£92
Montreal,	2 t.	19	1 q. 117
Potassium Carbonate—			
Baltimore,	12 t.	9 c.	£223
Potassium Chlorate—			
New York,	10 t.		£288
Rotterdam,	1		32
St. Petersburg,	15		483
Hiogo,	20		651
Melbourne,	5	5 c.	170
Vera Cruz,	2		60
Gotenbourg,	2	10	90
Lisbon,	10	5	370
Naples,	1		30
Hamburg,	4	4	130
Sydney,	8		264
Bari,	2		71
Copenhagen,	5	5	179
Potassium Prussiate—			
Genoa,	3 t.	8 c.	3 q. £166
Potassium Stannate—			
Bombay,	1 t.	2 c.	£60
Salt—			
Akassa,	606 t.	13 c.	
Algoa Bay,	23	7	
Amsterdam,	165		
Antwerp,	1,000		
Bayin,	5		
Boston,	100		
B. Ayres,	21	1	
Calcutta,	1,034		
C. C. Castle,	400 bgs.		
Cape Lahou,	200		
Christiania,	150 t.	110 sks.	
Conakry,	992 bgs.		
Gibraltar,		50 cs.	
Ghent,	175 t.		
Halifax,	170		
Hamburg,	30		
Iceland,	57		
Iquitos,	300 bgs.		
Kingston,		395	
Laurvig,	180 t.		
Matadi,	500 bgs.		
Montreal,	397 t.	4,900	
N. Orleans,	150		
New York,	200		
Para,	312	10 c.	
Philadelphia,	262 cks.		
Pt. Elizabeth,	5 t.		
Pt. Natal,	50		
Rio de Janeiro,	2	10	
San Francisco,	100		
Savannah, S.A.,	35	3	
Sierra Leone,	200		
Tacoma,	370		
Valparaiso,	220		
Vancouver,	130		
B.C.,			
Salt Cake—			
Philadelphia,	200 t.	9 c.	£293
Acajutla,	10	5	26

Saltpetre—			
Para,	3 t.	10 c.	£67
Vera Cruz,	2		40
San Francisco,	8	2	2 q. 162
Savanilla,	3	2	3 65
Ceara,	1	9	2 31
Larnaca,		17	17
Sheep Dip—			
B. Ayres,	32 t.	19 c.	£761
Soap—			
Accra,		10 bxs.	
Aden,		125 bdis.	
Alexandria,	30		40 cs.
Algoa Bay,	750		
Amsterdam,	45		
Antwerp,	10		
Arica,	37		
Barbadoes,	1,200		
Belize,	175		
Benguella,		6	
Bombay,	920	31	
B. Ayres,		16	
Calcutta,	10	21	
Cape Town,	50		
Cartagena,	20		
Colombo,		5	
Conakry,	350		
Copenhagen,		2	
Degama,	100		
E. London,	155		
Elmina,	154		
Gibraltar,	200		
Halifax,		6	
Hamburg,	455	500	300 20 dms.
Hiogo,	39		
Hong Kong,		55	
Iquitos,	400		
Kingston,	104		
Lagos,	216		
Las Palmas,	373		
Malta,	50		
Manaos,	350		
Montreal,		3 cs.	
Montego Bay,	100	1	
New York,	250		
Penang,	400		
Piræus,	154	13	
Pt. Elizabeth,		1	
Pt. Natal,	248		
Rangoon,	540		
Rotterdam,	102	1,672	
St. John's, N'd.,	189		
Sandy Point,		8	
Salt Pond,	20		
San Juan,	50		
Sapeli,	500		
Savanilla,		1	
Shanghai,	3,626		
Sierra Leone,	22		
Singapore,	4,233		
Smyrna,		20	
Teneriffe,	1,155		
Vancouver, B.C.,		50	
Victoria, B.C.,		61	
Victoria,	71		
Zanzibar,	1,000		
Soda Alkali—			
Barcelona,		115 brls.	
Genoa,		35	
Melbourne,		75	
Para,		20	
Piræus,		15	
Sydney,		37	
Toronto,		40	
Soda Ash—			
Antwerp,	800 bgs.	15 cks	
Baltimore,	1,102		
Barcelona,		20	
Batavia,		55 brls.	
Boston,		13	
Calcutta,		105	
Colon,		5	
Danzig,	80		
Fairwater,	850		
Genoa,	25		
Ghent,		69 tcs.	
Gotenbourg,		25	
Hamburg,	200		
Hiogo,		120	
Montreal,		59	
New York,	420	17	
Para,		42 brls.	
Philadelphia,	1,800	168 tcs.	
Rio de Janeiro,		350 brls.	
Rotterdam,	180		
San Francisco,		86 tcs.	176
Stockholm,		3	
Sydney,		265	
Vera Cruz,		7	
Soda Crystals—			
Alexandria,		60 brls.	
Bahia,		10	
Boston,		13	
B. Ayres,		50	
Cairo,		5	
Catania,		20 bgs.	

Halifax,	60 kgs.		
Hamburg,		15	
Kingston,			13 cks.
Malta,		50	
Montreal,	275	370	175
New York,			196
Philadelphia,	40		
Quebec,	135		35
San Francisco,		20	
Valparaiso,		120	88 dms.
Soda Oxide—			
Leghorn,		5 cs.	
Sodium Arseniate—			
Rotterdam,			2 cks.
Sodium Bicarbonate—			
Alexandria,		35 brls.	
Amsterdam,		30	
Ancona,	50 kgs.		
Antwerp,	70 bgs.		
Barcelona,	100 kgs.		
Bari,	38		
Bilbao,	60		11 cks.
Bombay,	185		
B. Ayres,			58
Cadiz,		10	
Christiania,	35	5	
Danzig,	62	6	
Genoa,	65		
Gutujewsky,	200		
Halifax,	100		
Hong Kong,	14		
Leghorn,			4
Lisbon,	50 bgs.		
Madras,	125 kgs.		
Malaga,		83	
Metelin,	25		
M. Video,	15		8
Montreal,	200		
Nantes,	52		
New York,	5 bgs.		
	190 kgs.		
Oporto,	30		
Quebec,	75		
Rotterdam,	50		
Rouen,	10		
Santander,	30	12	
Singapore,			6
Sourabaya,	20		
Sydney,	760		
Teneriffe,	10 bgs.		
Trinidad,			6
Sodium Bichromate—			
Montreal,	68 cks.		
Sodium Carbonate—			
Boston,		252 brls.	
Sodium Chlorate—			
Montreal,	200 kgs.		
New York,	50		
Sodium Hyposulphite—			
San Francisco,	100 kgs.		
Sodium Sulphate—			
Montreal,	10 cks.		
Rio de Janeiro,	20 kgs.		
Starch—			
Leghorn,	10 bxs.		
Oporto,	10 bgs.		
Pernambuco,		10 cs.	
Rio de Janeiro,		60	
St. John's,		13	
Sulphur—			
Boston,	250 t.	10 c.	£14
Superphosphates—			
Barcelona,	30 t.		
Gibraltar,	12		1 q.
Genoa,	150	8 c.	3
Stettin,	1,174	13	
Naples,	99	6	
Teneriffe,	10		
Gd. Canary,	10		
Tartaric Acid—			
Accra,		1 c.	1 q.
Tin Oxide—			
Bordeaux,		2 c.	2 q.
Varnish—			
Axim,			2 dms.
Callao,			
Coquimbo,		1 cs.	
Genoa,	10 pks.		
Leghorn,	12		
Lisbon,	1 ck.		
New York,	2		
Seville,		2	
Timbo,	10 pks.		
Valparaiso,	44		
White Lead—			
Algoa Bay,			120 dms.
Bahia,	30 kgs.		
Cape Lahou,		120	
New Glasgow,	28		
Vera Cruz,	10 cks.		
Zinc Chloride—			
Oporto,		18 c.	3 q.

MANCHESTER.

Week ending September 15th.

gloss,	12 cks.
India,	100 brls.
	5 cks.
	22
	3
	5
Colours—	
dam,	2 cks.
Oil—	
sp,	5 dms.
dam,	48
ic Acid—	
urg,	40 cks.
als (otherwise undescribed)	
urg,	42 cks.
8—	
dam,	2 cks.
as—	
	5 cks.
	5
te—	
	42 cks.
its—	
rp,	3 cks.
od—	
ria,	67 bgs.
ia—	
	75 cks.
Bicarbonate—	
y,	120 kgs.
dam,	6 cks.

HULL.

Week ending September 11th.

ium Sulphate—	
rp,	313 bgs.
	500
ony—	
	15 cks.
Carbonate—	
	80 bgs.
ing Powder—	
ork,	53 cks.
ersburg,	1 ble.
c Soda—	
	26 cks.
	15
	7
als (otherwise undescribed)	
rp,	1 ck. 2 cs. 38 pks.
dam,	1
	38 bts.
	1
aux,	20
ania,	367 slbs.
hagen,	10 pks.
rk,	100
heim,	10 kgs.
burg,	10
urg,	1 ck. 77
sherg,	122
ork,	20
	70
dam,	90 kgs.
ersburg,	13 cks. 52
	11
rg,	23 1 2
	2
seed Oil—	
rp,	602 c.
dam,	965
ux,	34
ia,	103
ania,	39
hagen,	100
burg,	140
urg,	1,424
dam,	295
te—	
	19,960 glns.
dam,	15 cks.
iffs (otherwise undescribed)	
rp,	3 cks.
	12
ania,	1
hagen,	12 bgs.
ork,	4 kgs.
dam,	5
	1 cs.

Glue—	
Amsterdam,	10 bgs.
Guano—	
Dunkirk,	1,000 sks.
Linseed Oil—	
Amsterdam,	103 c.
Alexandria,	40
Boston,	70
Bergen,	31
Christiania,	117
Christiansand,	35
Drontheim,	124
Hamburg,	239
Manure—	
Abo,	96 t.
Riga,	2,074 bgs.
Stettin,	271 t.
Paint—	
Hamburg,	10 kgs.
Painters' Colours—	
Antwerp,	95 cks. 6 cs. 2 dms. 123 pks.
Amsterdam,	4
Alexandria,	10
Bordeaux,	35
Bremen,	59
Boston,	4
Bergen,	4
Christiania,	1
Christiansand,	1
Copenhagen,	1
Dunkirk,	9
Gothenburg,	5
Hamburg,	10
Konigsberg,	30
Odessa,	34
Rotterdam,	12
St. Petersburg,	1
Wasa,	100
Pitch—	
Antwerp,	112 t.
	19 cks.
Sheep Dip—	
New York,	60 cs.
Soap—	
Antwerp,	26 cs.
Amsterdam,	65
Gothenburg,	1
Rotterdam,	6
Superphosphates—	
Copenhagen,	100 t.
Tallow—	
Amsterdam,	7 cks.
Gothenburg,	10
Wasa,	100
Tar—	
Antwerp,	52 t.
Copenhagen,	8 cks.
Hamburg,	15
Treacle—	
Abo,	10 cks.
Yarnish—	
Ghent,	2 cks.
Rotterdam,	1

GLASGOW.

Week ending September 16th.

Ammonia—	
Antwerp,	£80
Ammonium Carbonate—	
Stockholm,	£37
Ammonium Sulphate—	
Italy,	155 t. 14 c.
Hamburg,	50 13
Stockholm,	5 4
France,	109 11½
Borax—	
Rotterdam,	5 t. 6 c.
Carbolic Acid—	
Bombay,	£47
Coal Products—	
Benzine	
France,	£51
Benzol	
Rotterdam,	£60
Croosote Oil	
France,	£1,891
U.S.A.,	65
Pitch	
Hamburg,	16 t. 6 c.
Havre,	553 2
Canada,	
U.S.A.,	£253
Tar	
Calcutta,	177
Madras,	£225
Bombay,	158 20

Copperas—	
Bombay,	£33
Calcutta,	£24 15s.
Dried Blood—	
Nantes,	10 t. 1 c.
Extracts—	
Canada,	£388
U.S.A.,	215
Gelatine—	
Canada,	£175
Iron Sulphate—	
Bombay,	£28
Lead Acetate—	
Bombay,	£79
Lead Nitrate—	
Italy,	£100
Linseed Oil—	
Canada,	4 t. 7½ c.
Logwood—	
Canada,	£55
Manganese—	
Rotterdam,	4 t. 17 c.
U.S.A.,	£105
Manure—	
Bordeaux,	19 t. 13¼ c.
Paint—	
Calcutta,	qty.
Valparaiso,	£25
Painters' Colours—	
Colombo,	qty.
Mauritius,	"
Natal,	£32
Paraffin Wax—	
Genoa,	£67
Italy,	365
Skien,	8
Potassium Bichromate—	
Canada,	£325
Saltpetre—	
Montreal,	2 t. 4¾ c.
Soap—	
Valparaiso,	4 t.
Sodium Bichromate—	
Italy,	6 t. 19½ c.
Canada,	14¼
Sodium Sulphate—	
Calcutta,	4 t. 10 c.
Treacle—	
King Wm.'s Town,	2 t.
Christiania,	1 9 c.
Stockholm,	8 2
White Lead—	
Natal,	£20

TYNE.

Week ending September 11th.

Alkali—	
Amsterdam,	17 t. 3 c.
Aluminous Cake—	
Montreal,	13 t. 8 c.
Ammonium Carbonate—	
Montreal,	2 t.
Ammonium Sulphate—	
Barcelona,	50 t.
Antimony—	
Antwerp,	1 t. 4 c.
Hamburg,	2
Gothenburg,	2
St. Petersburg,	5
Barium Binoxide—	
Barcelona,	1 t.
Rotterdam,	19
Rouen,	22 11 c.
Bleaching Powder—	
New York,	7 t. 12 c.
Antwerp,	86 15
Hamburg,	5
Copenhagen,	14
Rotterdam,	16 17
St. Petersburg,	89 17
Gothenburg,	60 8
Bergen,	17 7
Abo,	60
Kotka,	99 19
Caustic Soda—	
New York,	25 t. 2 c.
Hamburg,	15 14
Copenhagen,	2 18
Barcelona,	54 3
Montreal,	14 10
Bergen,	2 13
Gothenburg,	11 12
Kotka,	2 10
Fluor Spar—	
New York,	50 t.

Gypsum—	
New York,	34 t. 12 c.
Litharge—	
Montreal,	11 t. 3 c.
Magnesia—	
Hamburg,	9 c.
Rotterdam,	10 t. 18
Barcelona,	1 q.
Manganese—	
Rouen,	7 c.
Manure—	
Rouen,	10 t.
Paint—	
Antwerp,	1 t.
Hamburg,	1
Rotterdam,	19 c.
Pitch—	
Rouen,	20 t. 3 c.
Phosphorus—	
Seville,	14 c.
Potassium Prussiate—	
St. Petersburg,	5 t. 5 c.
Soda—	
Antwerp,	15 t. 19 c.
Randers,	22 3
Rotterdam,	18 17
Amsterdam,	19 19
Gothenburg,	8 12
Soda Ash—	
Bergen,	6 t.
Gothenburg,	10 8 c.
Sodium Hyposulphate—	
New York,	15 t.
Sodium Prussiate—	
St. Petersburg,	2 t. 15 c.
Sodium Silicate—	
Barcelona,	10 t. 3 c.
Sodium Sulphate—	
Gothenburg,	150 t.
Genoa,	5 8
Sulphur—	
Gothenburg,	55 t.
Superphosphates—	
Aarhus,	520 t.
Frederikshavn,	715
Tallow—	
Genoa,	7 t. 4 c.
White Lead—	
Copenhagen,	3 t. 19 c.
Montreal,	25
Gothenburg,	10

GOOLE.

Week ending September 8th.

Benzol—	
Boulogne,	25 cks.
Rotterdam,	105
Coal Products (otherwise undes.)—	
Antwerp,	3 cks.
Boulogne,	53 3 pks.
Ghent,	3
Rotterdam,	77
Colours—	
Amsterdam,	10 cks.
Boulogne,	1 cs. 6 tins
Rotterdam,	6
Dyestuffs (otherwise undescribed)	
Ghent,	23 cks.
Hamburg,	1 cs.
Rotterdam,	150 pks.
Manure—	
Hamburg,	163 bgs.
Salt—	
Malpeque,	2,150 bgs.
P.E.I.,	
Soap—	
Ghent,	2 cs.

GRIMSBY.

Week ending September 11th.

Alkali—	
Port au Prince,	77 drs.
Hamburg,	5 cs.
Coal Products (otherwise undes.)—	
Hamburg,	6 pks.
Colours—	
Port au Prince,	2 cs.
Rotterdam,	3
Dyestuffs (otherwise undescribed)	
Dieppe,	1 ck.
Naphtha—	
Dieppe,	34 cks.

PRICES CURRENT.

WEDNESDAY, SEPT. 22ND, 1897.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—

	£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/6	& 8/6
" Glacial	"		40/-
Arsenic S.G., 2000	"	1	4 0
Fluoric	per lb.	0 0	3 1/2
Muriatic (Tower Salts), 30° Tw.	per bottle	0 0	10
" (Cylinder), 30° Tw.	"	0 3	0
Nitric 80° Tw.	per lb.	0 0	1 3/4
Nitrous	"	0 0	1 1/2
Oxalic	nett	0 0	3 1/2
Phosphoric, 1750°	"	0 0	11 1/2
Picric	"	0 0	11
Sulphuric (fuming 50 %)	per ton	15	10 0
" (monohydrate)	"	5	10 0
" (Pyrites, 168°)	"	3	0 0
" " 150°	"	1	5 0
" " (free from arsenic, 145°)	"	1	7 6
Sulphurous (solution) S.G. 1025	"	3	0 0
Tannic (pure)	per lb.	0 1	2 1/2
Tartaric	"	0 1	1 1/2
Arsenic, white powdered	nett	per ton	22 0 0
Alum (loose lump)	"	4	10 0
Alumina Sulphate (pure)	"	4	2 6
Aluminoferrous	"	2	3 6
Aluminium (Ingot metal 98/99 3/4 %	nett	"	148 0 0
Ammonia, Anhydrous	per lb.	0 1	3
" 880=28° B.	"	0 0	2 3/4
" " =24° B.	"	0 0	1 3/4
" Carbonate	nett	"	0 0 3
" Muriate	per ton	18	0 0
" " (sal-ammoniac) 1st & 2nd	per cwt.	33	& 31/-
" Nitrate	per ton	31	0 0
" Phosphate	per lb.	0 0	3 1/2
" Sulphate (grey) London	per ton	8	2 6
" " (grey) Hull	"	8	2 6
Aniline Oil (pure)	per lb.	0 0	7 1/2
Aniline Salt	"	0 0	7 1/4
Antimony	per ton	29	15 0
" (tartar emetic)	per lb.	0 0	8
" (golden sulphide)	"	0 0	10
Barium Chloride	per ton	6	10 0
" Carbonate (native)	"	3	10 0
" Sulphate (native levigated)	"	42/6	to 65/-
Bleaching Powder, 35 %	nett	"	6 5 0
" Liquor, 7 %	"	3	10 0
Bisulphide of Carbon	"	12	0 0
Chromium Acetate (crystal)	per lb.	0 0	6
Calcium Chloride	per ton	2	2 6
China Clay (at Runcorn) in bulk	"	15/-	to 30/-

Coal Tar Products and Dyes:—

Alizarine (artificial) 20 %	nett	per lb.	0 0 6 3/4
Magenta	"	"	0 3 9
Anthracene, 30 % A, f.o.b. London	per unit	per cwt.	0 0 6
Benzol, 90's	per gallon	"	0 2 0
" 50/90	"	"	0 2 1
Carbolic Acid (crude 60°)	per gallon	0 1	10
" (crystallised 40°)	per lb.	0 0	7 1/2
" (liquid 95/97%)	per gallon	0 1	0
Creosote (ordinary)	"	0 0	2 1/2
" (filtered for Lucigen light)	"	0 0	3
Crude Naphtha 30 % @ 120° C.	"	0 0	11
Grease Oils, 22° Tw.	per ton	2	15 0
Pitch, f.o.b. Liverpool or Garston	"	1	0 0
Solvent Naphtha, 90 % at 160°	per gallon	0 1	7
Copper	per ton	49	6 3
" Sulphate	"	16	12 6
" Oxide (copper scales)	"	44	10 0
Glycerine (crude)	"	30	0 0
" (distilled S.G. 1250°)	"	60	0 0
Iodine	nett, per oz.	0 0	7 1/2
Iron Sulphate (copperas)	per ton	1	10 0
" Sulphide (antimony slag)	"	2	0 0
Lead (sheet)	"	15	5 0
" Litharge Flake (ex ship)	"	15	15 0
" Acetate (white ")	"	22	10 0
" " brown ")	"	15	0 0
" Carbonate (white lead) pure	"	17	0 0
" Nitrate	"	19	0 0

Lime, Acetate (brown) (ex ship)	per ton	5	5 0
" " (grey) (ex ship)	"	8	0 0
Magnesium (ribbon and wire)	per oz.	0 2	3
" Chloride (ex ship)	per ton	2	10 0
" Carbonate	per cwt.	1	17 6
" Calcined Magnesia	per ton	8	0 0
" Sulphate (Epsom Salts)	per ton	2	15 0
Manganese, Sulphate	"	16	0 0
" Borate	per cwt.	2	10 0
" Ore, 70 %	per ton	3	10 0
Methylated Spirit, 61° O.P.	per gallon	0	1 8
Naphtha (Wood), Solvent	"	0	2 9
" " Miscible, 60° O.P.	"	0	3 10

Oils:—

Cotton-seed	per ton	16	15 0
Linseed	"	17	1 0
Stearine	per ton	22	0 0
Phosphorus (yellow)	per lb.	0	2 2
" " (red)	"	0	2 8
Potassium (metal)	per oz.	0	3 7
" Bichromate	nett	per lb.	0 0 4 1/2
" Carbonate, 90% (ex ship)	per ton	16	10 0
" Chlorate	per lb.	0	0 4
" Cyanide, 98%	"	0	0 10 1/2
" Hydrate (Caustic Potash)	per ton	23	10 0
" " (Caustic Potash) 75/80 %	"	20	0 0
" " (Caustic Potash) 70/75 %	"	19	10 0
" Nitrate (refined)	per cwt.	1	1 6
" Permanganate	per cwt.	3	15 0
" Prussiate Yellow	per lb.	0	0 5 1/2
" Sulphate, 90 % (ex ship)	per ton	9	15 0
" Muriate, 80 % (do.)	"	8	10 0
Silver (metal)	per oz.	0	2 2 1/2
Sodium (metal)	per lb.	0	2 11
" Carb. (refined Soda-ash) 48 %	nett	per ton	4 15 0
" " (Caustic Soda-ash) 48 %	"	"	4 5 0
" " (Carb. Soda-ash) 48 %	"	"	4 0 0
" " (Alkali) 58 %	"	"	3 17 0
" " (Soda Crystals)	"	"	2 5 0
" Acetate (ex-ship)	"	11	10 0
" Arseniate, 45 %	"	14	7 6
" Chlorate	per lb.	0	0 4 1/2
" Borate (Borax)	net, per ton	14	15 0
" Bichromate	per lb.	0	0 3 1/2
" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	"	9	0 0
" " (74 % Caustic Soda)	"	8	10 0
" " (70 % Caustic Soda)	"	7	10 0
" " (60 % Caustic Soda)	"	6	10 0
" " (pure liquor 90° Tw.)	"	3	15 0
" " 77/78 % powdered (99 % hydrate)	"	12	10 0
" Bicarbonate	"	6	10 0
" Hyposulphate	"	5	0 0
" Manganate, 25%	"	15	0 0
" Nitrate (95 %) ex-ship Liverpool	per cwt.	0	7 4 1/2
" Nitrite, 98 %	per ton	27	10 0
" Phosphate	"	10	10 0
" Silicate (glass)	per ton	4	10 0
" " (liquid, 100° Tw.)	"	3	7 6
" Stannate, 40 %	per cwt.	3	2 9
" Sulphate (Salt-cake)	per ton	0	19 0
" " (Glauber's Salts)	"	1	7 6
" Sulphide	"	6	15 0
" Sulphite	"	5	0 0
Strontium Hydrate, 100%	"	13	15 0
Sulphocyanide Ammonium, 95 %	per lb.	0	0 5 1/2
" Barium, 95 %	"	0	0 4 1/2
" Potassium	"	0	0 6 1/2
Sulphur (Flowers)	per ton	7	10 0
" (Roll Brimstone)	"	6	10 0
" Brimstone: Best Quality	"	4	10 0
Superphosphate of Lime (26%)	"	2	5 0
Tallow	"	19	0 0
Tin Crystals	per lb.	0	0 4 1/2
" English Ingots	per ton	65	0 0
Zinc (spelter)	"	17	17 6
" Chloride (solution, 100° Tw.)	"	4	17 6
" Sulphate, Crystal	"	5	2 6

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41.

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Vol. XXI.

Contents.

	PAGE		PAGE
Nitrate Crisis.....	209	The Thermal Springs of Machachi.....	214
Technical Schools.....	210	Mineral Statistics of the United Kingdom.....	215
Latest Complete Specimens.....	211	Notes on Foreign Trade.....	215
California.....	211	Trade Notes.....	215
Companies.....	212	Tar and Ammonia Products.....	216
and Typhoid Fever.....	212	Miscellaneous Chemical Market.....	216
Phosphate Deposits.....	213	The Metal Market.....	217
er Culvert Scheme.....	213	Report on Manure Material.....	217
nder the Fertilizers.....	213	Liverpool Oil and Colour Market.....	217
Gold Production.....	214	West of Scotland Chemicals.....	217
Fertilizer Trade.....	214	Tyne Chemical Report.....	217
		New Companies.....	218
		Imports.....	221
		Exports.....	221
		Prices Current.....	224

VERTISEMENTS.

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THE SODIUM NITRATE CRISIS.

MANY lessons, inferences, deductions, and the like have been drawn from the progress of the Nitrate Combine at different times, but on the present occasion this combination is not the peg but the essence of the discourse itself. Evil prophets are prone to proudness when their forecasts are fulfilled, but in the present case, though we chance to be on the right side of things, we do not wish to take much credit, because it has been obvious, almost from the start of the last attempt at combination in the nitrate industry, that there were troubles ahead, and the end would not be peace.

Dissension seems to have been closely associated of late with all things nitrate, and with the refusal of the Salar del Carmen Syndicate to renew its connection with the Combine, the last fatal straw has been added to the load. Almost as we go to press a meeting will be in progress, the object of which, ostensibly, is to consider the position, but as a matter of fact its being called, practically sounds the death-knell of the Combine.

At this juncture it is interesting to look back at the history of these co-operative efforts to limit the output of nitrate, and so maintain prices at a dividend paying level.

The first took shape in 1884, thirteen years ago, and lasted three years. The filip that this restriction gave, bore fruit for a few years, and then in 1891 the Combine was re-organised and continued in force until 1893. The next year the "Asociacion Salitrera de Propaganda" was formed, and endeavoured to achieve with literature and advertisements the same benefits as the Combine had, but in a different way.

Apparently this was not enough, however, and in 1896 efforts were made to resuscitate the Combine. But whereas formerly there had been comparatively few companies and interests to satisfy, there were now several, and many of the latter were conflicting. After prolonged delays and much fluttering in the dove-cote, the Combine was achieved, but there was not the same unanimity as before, and it has been with difficulty that a rupture has been averted during the last 18 months. Now it has come, and the chances of any further internal agreement are of the remotest.

That prices will fall is scarcely a doubt, and that this will mean ruin to a good many of the existing companies there is not a shadow of doubt; while as to the disastrous results to the shareholders, there is "no possible, probable shadow of doubt, no possible doubt whatever."

Yet, although the immediate future looks formidable, there is no reason why things should not right themselves to a certain extent, though it will take longer now than it might have done formerly. Very nearly two years ago we ventured to express the opinion that as the crash must come sooner or later, the sooner the better; because the companies

would be better able to stand the racket of the winnowing process that a fall in nitrate would render inevitable. To quote the very words themselves, they ran: "It is an open question whether the collapse had not better come now, and so clear the way for a fresh start on a healthier basis . . . we incline towards seeing the Combine abandoned as a vain hope, and the conflict of companies commenced . . . better to know the worst at once than to build on hopes that will eventually crumble into the dust of disappointment," and truly it seems to have been the last few words that have been most amply verified.

At the time when the above was written there was a reasonable hope that those who were not crushed in the *débris* during the collapse would find to their hands a profitable industry; but now the position is changed. In the interval new companies, better equipped, and, in a measure, less dependent upon fluctuations of price, have made their appearance.

It is mainly the independence of these companies that has compassed the breaking up of the Combine. Consequently, when things have come round a little, the older producers will be in much the same position as they are now, because these new *oficinas*—such as the Alianza, which is about to enter the nitrate arena—will absorb the *quota* of the defunct companies instead of leaving it to swell the revenues of the survivors. All that we can wish is that the older companies, girding themselves with sword and buckler, will fight with the determination and courage inspired by quasi-desperation, and so merit victory, instead of courting failure by entering the fray with the forlorn air of faint-heartedness.

CONTINENTAL TECHNICAL SCHOOLS.

REPORT OF THE MANCHESTER DEPUTATION.

IN pursuance of a resolution of the Technical Instruction Committee, confirmed by the Manchester City Council, a deputation, comprising Mr. Alderman Hoy, Mr. Alderman Crofield, Mr. N. Bradley, Mr. Ivan Levinstein, Mr. John Craven, Mr. Charles Rowley, and Mr. J. H. Reynolds recently visited a number of institutions and schools on the Continent, devoted mainly to scientific and artistic instruction as applied to industrial and commercial pursuits. In their report to the Committee the deputation mention the fact that in 1891 a visit was paid to several of the more important technical schools in France, Germany, Austria, and Switzerland, and that a report was then issued showing the extent to which provision had been made for the supply of instruction of a scientific and technical character in aid of the commerce and of the industries of those countries. "In the meantime," the report proceeds, "the council has undertaken the responsibility of maintaining the technical and art schools of the city, and with the purpose of giving full effect to that responsibility has already not only greatly developed these institutions, but has embarked upon the erection of the largest technical school in the country, the proper equipment of which is a matter of the most serious concern and importance. The erection of the new school was begun in August, 1895, and its completion, ready for the occupation, is confidently expected at an early date. The Committee, therefore, feel that it is high time the question of the equipment of the school was considered, especially in respect of the important departments concerned with the textile industries, with the industrial application of chemistry, and of physics in relation to electrical engineering. . . . Your Committee felt that it would be the height of unwisdom, having in view the serious responsibility of equipping the new Municipal Technical School in Manchester so as to meet adequately and effectively the demands of a great industrial centre such as this, were they to neglect the opportunity of seeing what Continental countries have done of late, and what they are now doing in this regard. Especially is this a necessity with respect to the extraordinary development which has taken place within quite recent years in electrical science as applied to electrical engineering industries, and with the certainty of great extension in the near future. Hardly less important is the great textile industry in its various departments of spinning, weaving, designing, dyeing, and finishing, in some of which we find ourselves at a serious disadvantage (especially those in which chemistry plays a part) as compared with our foreign competitors. It has

been found necessary in the dyeing and finishing schools abroad to discard mere laboratory methods, and to equip them on a scale approaching that of the works themselves, and analogous to the practice obtaining in the spinning and weaving schools, so as to give the students who are trained in them a real, practical, and effective knowledge of the processes employed." Reference is then made to what the deputation saw at Crefeld and in its well-equipped textile and dyeing schools. "Your deputation is convinced," says the report, "as a result of the inspection of the Crefeld School, that this district would gain materially by the development of our textile school in the new building on the same lines. 1. By the increase in the number and variety of the looms and of the goods woven upon them. 2. By the establishment of a school of tinctorial chemistry, and of practical dyeing and finishing upon an adequate scale, alike in respect of the completeness and the real efficiency of the machinery employed. 3. By the establishment, in actual touch with the other departments of the school, of a well-organised museum, replete with examples of ancient, mediæval, and modern productions of the best type of workmanship, colour, and design. It is to variety and excellence in these respects that Lancashire must look to maintain and increase its supremacy and reputation as a manufacturing centre." From Crefeld the deputation went to Aix-la-Chapelle, thence to Berlin, Darmstadt, Dresden, Vienna, and other places. After dwelling on the zeal shown by Germany in technical training, the deputation remark: "That Germany is in a prosperous condition, due to her successful manufacturing and commercial enterprise, was plainly evident on every hand in the extension of her cities—the making of new streets and the erection of fine, handsome buildings which is going on everywhere in her large towns. It is not less clear that the schools are the root and base of this surprising industrial development, and are the main contributors to this great economic result; it is no less certain that if we are to maintain our position as a great industrial community it must be by following and adopting the same methods. It is not, however, only in the domain of science that Germany is making great progress. In almost every town visited by the deputation fine industrial art museums were found, arranged with the express purpose of cultivating a knowledge of what has already been accomplished in the production of fine examples of colour, design, and workmanship. Every technical school has its special museum of objects applicable to its purposes. Notably was this the case in Berlin, Vienna, Nuremberg, Crefeld, and at Düsseldorf, in which latter place the Industrial Art Museum is said to be the finest in the Rhineland. These museums help to preserve and hand down the traditions of past achievement and excellence, and stimulate the desire to reach to as high or higher levels to-day." In concluding their report the deputation express their sense of the advantage, whatever the ultimate drawbacks, of a centralised bureaucratic administration, which, taking a careful survey of the educational and industrial needs, placed the schools here or there as circumstances required, brought them into mutual relation, supplied ample means, and effectively assisted, without loss of time, the industrial advance. Something might be lost of "freedom, variety, and elasticity," and that loss might ultimately be serious in its effect upon individual initiative, upon which we as a nation so confidently relied. Which was the better policy the future could alone determine. It might, however, be safely asserted that it was high time the effort was made in this country to give to our youth the educational advantages, general and special, which were enjoyed by their rivals abroad. Exception had sometimes been taken to the size and cost of the new buildings now being erected by the Technical Instruction Committee for the Municipal Technical School, but the deputation, had returned from their visit doubly confirmed in their conviction that every foot of space would be needed, and that even when fully utilised and equipped it would fail to rival in amplitude of resource the splendid industrial schools of Germany and Switzerland.

EAST LONDON TECHNICAL COLLEGE (PEOPLE'S PALACE).—We have received the syllabus of this college for the ensuing session. The work is divided into three departments—viz., the day school, the day classes, and the evening classes. The object of the *day school* is to prepare boys between 12 and 16 years of age, by means of courses of instruction in science, art, languages, and the use of tools, to enter a trade or profession demanding scientific or artistic training and manual dexterity. With this view, the theoretical instruction given is combined with systematic practice in the laboratories, workshops, and studios. The *day classes* are intended for students both male and female over 15 years of age, who have left school, but are able to devote their daytime to study. Courses of instruction are arranged in engineering, chemistry, art, and in preparation for the B.Sc. degree of the University of London. Every student is expected to take a full course, except under special circumstances. In the *evening classes*, students are prepared for the examinations of the London University, and of the Science and Art Department, and for entry into the Civil Service and other public employment. Classes in trade, general and commercial subjects are also held.

The Patent List.

List is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of E. Davis and Alfred R. Davis, who report professionally value of Chemical Patents.

LOCATIONS FOR ENGLISH LETTERS PATENT.

Silver from Pyritic Ores. C. P. Shrewsbury and F. L. Marshall. September 13.
 Mining Silico-Fluorides and Boro-Fluorides into Fluorides. ch. 21,073. September 14.
 Cure of Steel. T. J. Hesketh and H. Jones. 21,123. September 14.
 Manures. W. Walters. 21,175. September 15.
 Sodium Carbonate Solutions Obtained by Electrolysis. Hargreaves. 21,178. September 15.
 Stand for Retorts, etc. W. P. Thompson. 21,182. September 15.
 Sizing and Gum from Waste Paper. C. Beadle. 21,193. September 15.
 Using and Consuming Sewer Gas, etc. D. France. 21,240. September 16.
 Gas Furnace. G. T. Holloway. 21,311. September 17.
 Composition. H. Oldhall. 21,328. September 17.
 High Vacuum. A. Barr and W. Stroud. 21,359. September 17.
 Water. L. Devaux. 21,102. September 17.
 Precious Metals. J. Baxeres and S. de la Precilla. 21,448. September 18.
 Cement, Artificial Stone, etc. C. Heap and T. Ody. September 18.

TRACTS OF LATEST COMPLETE SPECIFICATIONS.

abstracts are specially prepared for the Chemical Trade Journal, RIGHTS of publication are RESERVED. This is the earliest abstracts of Chemical and allied patents accessible to the

ments in the Manufacture of Salt from Brine. J. W. Weston, Charles-road, Surbiton, and T. I. Weston, Wickham Lodge, Wickham, Essex. Eng. Pat. 23,614. October 23, 1896.

pparatus consists of a rectangular tank or boiler, open at the top with a sloping bottom that inclines to one side, so that the salts are deposited in pockets, from which they can be removed. The tank is heated by a furnace, the products of combustion passing flues running first underneath, then through the tank, and back to the side flues to the chimney. Along the top of the tank, and immersed in the brine, is a hollow cylinder, which is caused to revolve which is heated by the passage of a portion of the products of combustion that is diverted from the central flue in the boiler. As the cylinder revolves, it carries up a thin film of brine, which partially dries. The crystals as formed are removed by a scraper, and pass into a separate set of pockets, from which they can be discharged. The crystals are partially dried in a centrifugal machine, and then dried in heated chambers. There are three drawings, showing the construction of the apparatus.

ments in the Manufacture and Treatment of Detergent and Washing Compounds, and in Apparatus employed therein. J. J. Leves, Widnes, and R. Armstrong, Preston. Eng. Pat. 18,589. August 22, 1896.

dominant idea is to use cheap solutions of sodium carbonate of the solid. Numerous methods are described. Thus, vat may be treated with limekiln gases, or it may be cooled, and crystals of the carbonate obtained. The caustic present is dissolved into the carbonate by adding bicarbonate of soda in excess. Application of the Hargreaves-Bird electrolytic process is also made, this method yielding solutions of mono-carbonate and sesquicarbonate. In making the detergents, either "light roasted ash" or soda, free from iron, is added, to give a dry compound of carbonates when cooled. In practice a readily-soluble detergent is obtained by incorporating the mono-hydrated carbonate in a concentrated solution of carbonate at about 80°C. To make it saponaceous, suitable oils, fats, or "niger" soap can be added. An saponaceous detergent may consist of the following:—Soda ash (as dry mono-carbonate), 50 parts; water, 35 parts; and linseed oil, 15 parts. The addition of hypochlorite and camphor oil imparts slight bleaching properties. There are three figures, showing different forms of mixing apparatus, in which the mixing and kneading, or the "planetary" system, is used. In the third method agitation with air is used.

Material to be Employed as a Substitute for Leather, Paper, or other Analogous Substances, and a Process of Manufacturing same. F. Billing and A. Letalle, both of Livery-street, Birmingham. Pat. 22,965. October 16, 1896.

sheets of cotton wool, so laid that the fibres cross at right angles, and are submitted to the action of a solution made by dissolving

gelatine or glue (that has absorbed as much water as possible) in methylated spirits, naphtha, etc. The solvent must be well sprayed on to the gelatine, otherwise it will not mix. At this stage any suitable pigment may be added. The material when nearly dry is treated with a solution of alum, tannin, or other coagulant. The product is then dried, and rolled into sheets of any desired thickness, or embossed between plates to imitate morocco and other leathers.

Improved Process for Making Soap. R. Gesell, 229, Kurfürsten Damm, Berlin. Eng. Pat. 17,738. July 28, 1897.

In this soap the cleansing of the skin is not dependent upon an excess of alkali or sand, but asbestos or impregnated woody fibre is incorporated to this end. The fibre is impregnated with boric acid and other antiseptics, also perfumes, which under pressure enter the pores or cells, and are retained in a fresh state, this being particularly the case with essential oils. A small percentage of pulverised bran and oatmeal is also added, the resulting soap being soft to the skin, and yet a powerful cleanser. A suitable mixture consists of 2% of ground wood fibre, 1% each of pulverised bran and oatmeal, and 0.5% of asbestos. This is added to the soap mass, and then the whole incorporated with about 5% of boric acid.

Improvements in Ferro-Sodium Fluxes, more particularly those adapted for use in the Manufacture of Iron and Steel. A. E. Tucker and T. V. Hughes, both of 35, Paradise-street, Birmingham. Eng. Pat. 14,222. June 26, 1896.

These fluxes are used for removing the oxygen present in "blown" Bessemer steels or in Siemens steels, and also to remove slag by thinning it. They are made up of iron oxide, an alkaline flux, such as soda ash, and a reducing agent. A convenient mixture is composed of 100 parts each of "Blue Billy" and dry carbonate of soda, with 44 parts of powdered charcoal. This composition is reduced to a fine powder that will pass a sieve with 20 meshes to the inch, and made into bricks, using tar, silicate of soda, or china clay as a binding agent. Generally 5% of tar is sufficient. The bricks are then dried at 150°C. in a reducing atmosphere. When cool they are coated with paraffin wax to prevent oxidation. When not wanted in the form of bricks the finely-powdered material can be packed at once in air-tight cases.

CANAIGRE IN CALIFORNIA.

CANAIGRE is the American corruption of the Spanish "cana agria," sour cane. It is also called "Verba-Colorado" in Mexico, localisms being "red dock," "tanner's dock," and "wild rhubarb." The best way to propagate the plant is by use of small roots rather than by seed. About 1,000 lbs. of tubers will plant an acre, and October and November are the best months for putting in the crop; though where irrigation can be practised, planting may be done at any time. The value of canaigre as a tanning agent, either alone or in connection with other tannins, has been proved beyond question. For light leather it gives great tensile strength, and is far better for split leather than gambier, oak, or hemlock. It is a quick tanner, and the yellow colour absorbed by the hide in the process of tanning is considered highly desirable for certain leathers. The sliced and dried tubers, containing an average of 30 per cent. of tannic acid are worth from £8. to £9 per ton. A yield of from 7 to 10 tons per acre, would give 2½ to 3½ tons of the dried product, for which there is a constant demand in Europe and America. Inasmuch as the plant grows wild in this vicinity, and the seed roots are readily obtained, the industry commends itself to the farmer of small means, as it is harvested in such a short period after planting.

A great deal of interest is being taken in the Los Angeles district in the cultivation of canaigre. It was stated in the Californian press in February last, that a syndicate of English and American capitalists had purchased 22,000 acres about 50 miles east of this city for £100,000, for the purpose of cultivating canaigre. The agent for the San Francisco Savings Union (the vendors) stated that the purchasers, the Anglo-American Canaigre Co., consist of an American and an English syndicate; that the American syndicate is taking over the land, and the English syndicate is interested only in the product. The vendors acquired the property under foreclosure, and are selling at cost price. The company is planting 8,000 acres this season.

MANGANESE IN BRAZIL.—New mines of manganese in Brazil are now being worked, two cargoes having already been sold in England, while a third is on its way. The ore shows, according to the assays of Messrs. Pallison and Pearson, 50.61% of manganese, with 0.04% of phosphorus and 0.92% of silica, in the case of the cargo first despatched, while the figures for the second cargo were: Manganese, 50%; phosphorus, 0.043%, and silica, 1.70%. The mines are situated in the Province of Miguel, and are the property of Messrs. Airoza and Co., for whom Messrs. Dreyfus and Cie, 34, Rue Tailbout, Paris, are agents.

Reports of Companies.

ANGLO-SICILIAN SULPHUR CO., LTD.

A DIVIDEND of a penny a share does not suggest great prosperity ; but the shares, which are those of the Anglo-Sicilian Sulphur Company, are only 1s. each, and the distribution is at the rate of about 8½ per cent. The report of the council for the first financial year ended July 31 last, states that, although the accounts cover the first year of the company's existence, and include expenses for the full twelve months, the period of actual working represented is much less, being about ten months in Sicily and only seven months in this country. During this shortened period of trading the gross profits have amounted to £63,752., which with interest on temporary investments and other receipts, have brought the total gross profits to £68,383. After deducting all expenses and writing off £6,433. on account of goodwill, preliminary expenses, and depreciation, a net profit is shown of £42,920., out of which sum the council recommends payment of a dividend at the rate of 6 per cent. per annum on the preference shares, absorbing £30,129. Of the balance, 20 per cent., or £2,558. has been credited to the capital guarantee fund (held in reserve according to articles of association Nos. 13 and 17), £7,020. has been placed to general reserve, and the remainder is payable as follows :—One-tenth to the preference shares, or £321., which, being too small for division, is carried forward to their credit ; nine-tenths to the ordinary shares, or £2,891., with which the council recommends the payment of a dividend, free of income-tax, of 1d. on each ordinary 1s. share (equal to about 8½ per cent.) The council has to report that of its original members the Marquis de Beauvoir and the Comte Raoul de Quélen have retired.

CASTNER-KELLNER ALKALI COMPANY, LIMITED.

The interim report, issued yesterday, states that the first installation has been at work without intermission since the annual meeting, gradually increasing its output up to its full capacity. The second installation of equal capacity—namely, 1,000 h.p.—will be in operation during the winter. The directors have entered into a contract for the sale of all the bleaching powder that can be produced by the company for three years from July last. The directors have decided to call up the remaining 4s. per share, and to procure such further capital as they require for the rapid completion of the third and fourth installations by the issue of preference shares, or by debentures, as may be subsequently determined. The full report will appear next week.

FRENCH ESPARTO.

THE principal export to the United Kingdom from the port of Oran is that of esparto grass for the manufacture of paper. This trade, in so far as the exports from the port of Oran are concerned, remains almost stationary, being a little over 40,000 tons per annum. The total shipments from the province are, however, augmenting yearly, and that notwithstanding the gradual lowering of prices during the last ten years. The augmentation is to be found principally in the increased shipments from the port of Arzeu, and is to be accounted for by the preferential tariff of the Franco-Algerian Railway Company (Arzeu to Saïda and prolongation), which accords a lower mileage rate for esparto going entirely over their system to Arzeu. Formerly this grass was almost entirely transhipped on to the P. L. M. line (Algiers to Oran) at the junction of the two lines at Pénégaux, and brought on to Oran for baling, etc., thus augmenting shipments in spite of the constantly diminishing prices of this article, and requires some explanation. The first and principal reason is that of the opening up of the province by railways, and secondly the Government having since the last incursion of Ben Amama in 1890-91 reserved all Government lands to be plucked entirely by the Arabs, thus replacing the Spanish element.

This constant lowering of prices seems all the more strange, inasmuch as prices of other qualities of esparto, more particularly of Spanish esparto, remain about stationary, and there is no doubt that the quality shipped from Oran is better now than before. The time of plucking is limited to the summer months, when grass is at its best, whereas it was formerly plucked all the year round, and in winter was of bad quality. This esparto question is a vital one for this province, as it has been the principal factor in its colonisation. It is, however, hard to see how, in face of an augmenting production on the one hand, and the enormous quantities of woodpulp now being employed, prices can rise. It should nevertheless, at present prices in the United Kingdom, be the cheapest material in the market for the manufacture of paper. French

Continental paper-makers have never shown any enthusiasm for esparto, and that notwithstanding its great employment in the United Kingdom, principally in Scotland. On the other hand, *crin végétal*, or jute fibre, which is largely used on the Continent and in America, is in great favour in the United Kingdom. It is used for stuffing furniture, railway carriages, &c., and large quantities are made and exported from Oran.

WATER POLLUTION AND TYPHOID FEVER.

THE medical officer of health for Maidstone reported to the Sanitary Committee on Saturday last that 714 cases of typhoid had been registered in the borough up to ten o'clock, being an increase of 100 since Friday. The deaths from the malady during the past six days have been twelve, seven in West and five in East Maidstone. There are now upwards of seventy patients in the Barming Asylum and twenty persons affected in Barming parish. The Local Government Board have sent down Dr. Theodore Thomason to hold an official inquiry into the outbreak.

The Maidstone authorities have evidence that the Tutsham springs at Farleigh were polluted, and were the cause of the outbreak of typhoid fever in the town and the neighbouring parishes. The position of this set of springs has been condemned not only by the medical officer of health, but by every expert who has made an inspection during the past week. On one side is a hop ground, on which fish manure has been placed year after year, and the theory of more than one authority is that the heavy rains of six or seven weeks ago washed the impurities from this ground into the springs. There is also an old fruit pickers' and hop pickers' encampment within a short distance of the springs, and it is said to be highly probable that impure matter from this place found its way into the water. It is understood that the whole of the Farleigh supply will be cut off in accordance with the request of the Sanitary Committee of the Town Council. It is a significant fact that persons whose supply of water is derived from other springs have escaped the malady. It was believed that in the end a thousand persons would be affected in Maidstone by the fever. Considerably more than 1,000 have now been reported.

RUSSIAN OIL FOR MANCHESTER.

IN view of the arrival at Manchester of a large tank steamer with the first consignment of Russian petroleum for storage in the large tanks now in course of erection by the Liverpool Storage Company on the banks of the Ship Canal, immediately below the Mode Wheel locks and adjoining the Foreign Animals Wharf, it may not be out of place to draw attention to the importance of this particular trade as a source of revenue to the Canal Company, and to the steps which are being taken by a number of leading firms associated with the business to secure its diversion to the Port of Manchester as the distributing centre for the North of England. For at least two years previous to the opening of the Canal the management were in communication with principal companies importing oil into this country with the object of inducing them to send their steamers up to Manchester, but their efforts in this direction were, until towards the close of last year, absolutely without success. The reply in every case was to the effect that the companies could not afford to put down new instalments in Manchester and divert any portion of their trade from its existing channels until they were forced to do so, though they admitted that Manchester was most favourably situated as a distributing centre, and they recognised the facilities provided by the Canal Company for the safe and speedy navigation of the waterway by tank steamers. However, in November last the Liverpool Storage Company apparently came to the conclusion that the time had arrived when it would be desirable to establish a depot here, and negotiations were entered into with the Ship Canal Company for the purchase of a suitable plot of land for that purpose, and this having been secured they at once proceeded with the erection of five large tanks, each with an average capacity of about 4,000 tons. These are now in an advanced stage of construction, and, as stated, the first shipment of oil for storage in them is expected shortly.

THE RUSSIAN OIL DEPOT.

Realising the importance of the new development of the trade, the Anglo-Caucasian Oil Company, immediately upon hearing of the action of the Liverpool Company, took steps to establish themselves here, and they are now erecting ten large tanks on the opposite side of the canal, on a plot of land at the rear of the Eccles Town Hall. Although in the case of this company the land was not purchased till April last, two tanks are already completed and actually in use, the first consignment of oil having arrived from Batoum a few weeks ago by the steamer *Rocklight*. Up to the present the Anglo-Caucasian Company has had no storage depot in this country at all, but having decided to commence operations here, they have selected London and Manchester as the ports to which their oil shall be shipped, and the whole of their trade with the northern and midland counties will be conducted from their establishment at Eccles. They are providing storage capacity for 40,000 tons of oil, are constructing a wharf with every convenience for efficiently dealing with the traffic, and are laying down lines of railway which will place the depot in direct communication, through the Canal Company's lines, with every railway system in the kingdom.

THE ALGERIAN PHOSPHATE DEPOSITS.

FRESH phosphate beds have lately been discovered in different parts of the colony, besides those already existing in the district of Tebessa, Algeria.

The administration proposed putting up for contract those beds which were considered rich enough for working, but they, at the same time, submitted to the Chambers, according to the decree of October 12th, 1895, a proposal regulating the mode of the concession. In consequence, however, of certain complications which have since arisen, no contracts have, as yet, been concluded.

The three workings in the district of Tebessa produced the following tonnage during 1895:—

	Quantity. Tons.
Djebel-Dyr (Crookston's concession)	66,628
Djebel-Konif (Jacobsen's concession)	53,273
Société Française (Barbotté's concession)	36,956
Total	156,857

During the first 10 months of 1896 the phosphates from the above works amounted to 122,037 tons.

THE MANCHESTER CULVERT SCHEME.

NO SHIP CANAL OPPOSITION EXPECTED.

A SPECIAL meeting of the Rivers Committee of the Manchester Corporation was held this week, Alderman J. Thompson presiding. The proposal to construct a culvert from Davyhulme to the Mersey for the conveyance of the city sewage was under consideration. It is stated on good authority that no opposition is now expected to the scheme from the Ship Canal Co., steps having been taken to embody in the plans proposals which are intended to safeguard the interests of the waterway.

THE POLL ON THE SCHEME.

With reference to the poll of ratepayers and owners on the proposals of the Rivers Committee, which were rejected by the town's meeting, it has been arranged that the voting papers shall be distributed on Monday, October 25, and collected on the Friday following, the result being declared on Saturday, October 30.

THE PROPOSED INCLUSION OF SALFORD.

The Salford Corporation have lost no time in following up their suggestion that they should join Manchester in their proposed sewage culvert scheme for carrying the effluent to the tidal waters of the Mersey. A deputation from the Salford Corporation has met the special sub-committee of the Rivers Committee of the Manchester Corporation, and the matter was generally discussed, but in the absence of anything approaching a definite scheme to meet the new development it was impossible to come to any decision, and it was left to both sides to consider the matter and formulate some plan to be considered at a future meeting. There are difficulties in the way of the new scheme, but the members of the Manchester Committee are disposed to look favourably upon Salford's proposal. One of the most important questions to be decided will be as to whether the sewage from Salford should be taken for treatment to Davyhulme, or whether it should be treated on the same plan and the effluent then conveyed to the Manchester culvert. At present the two systems of precipitation are different, and although the effluent would be satisfactory as it came from each works, it would not be so when the two chemically charged liquids were mixed. The difficulty is further increased by the proposal that Eccles and Stretford, as well as other neighbouring places, through which the culvert would pass should all join in the scheme. Uniformity of treatment would, of course, remove the obstacles, and to this end the various local authorities may possibly direct their efforts.

AN OUTSIDE OPINION.

At the close of a long article, a contemporary devoted to the interests of public health and sanitary engineering says:—Taking all things into consideration, we are of opinion that the culvert furnishes the best solution of the problem. It is a scheme put forward by the city's able engineer, which has the approval of such an eminent chemist as Sir Henry Roscoe, and of such skilful engineers as Sir Benjamin Baker and Mr. James Mansergh. The tank effluent of the London sewage is disposed of in this way, and the city of Glasgow, after spending a great amount of money on purification works, has now obtained Parliamentary authority for discharging its tank effluent into the tidal waters of the Clyde. There is one more point which has not been overlooked, and of which brief mention may be made. The adjacent borough of Salford has the same difficulties to face as Manchester; the directors of the Ship Canal and the members of the Joint Committee are alike cognisant of the unsatisfactory state of its sewage effluent. It has

therefore been suggested that a conference should take place between members of the Councils of the city and borough with a view to the combined tank effluents being conveyed to the tidal waters of the Mersey by the same culvert. This would undoubtedly reduce the cost per head of population, and the suggestion is worthy of careful consideration by the Salford Corporation if the Manchester ratepayers decide to adopt the culvert scheme.

PROSECUTION UNDER THE FERTILIZERS ACT.

ARTIFICIAL-MANURE MAKERS HEAVILY FINED.

AT the County Petty Sessions at Lichfield, on Wednesday last week, Margaret Catherine Ginster, Frank Ginster, and Rudolph Ginster, trading as M. C. Ginster and Sons, patent-manure manufacturers, of Erdington, was summoned at the instance of the Staffordshire County Council for selling to Mr. N. C. A. Neville (stipendiary magistrate) two tons and ten cwt. of turnip manure for use as a fertilizer on the 7th of June, and also ten cwt. of the same on the 5th of July, and for unlawfully failing, without reasonable excuse, to give on or before or as soon as possible after delivery an invoice setting forth the name of the article, whether it was an artificially compounded article or not, and what was at least the percentage of the nitrogen, soluble and insoluble phosphates and potash, if any, contained in the said manure. Mr. Fisher (instructed by Mr. Hutchinson, from the office of the clerk of the Staffordshire County Council), appeared for the prosecution; and Mr. Vachell (instructed by Messrs. Buller and Cross, Birmingham) for the defendants. The proceedings were taken under the Agricultural Fertilizers and Feeding Stuffs Act 1893. It was shown for the prosecution that the defendants sold patent manure at from £6. 10s. to £7. 10s. per ton, the same being advertised as composed of fish, blood, horn, hoofs, bones and other animal matters of which some were dissolved and some were undissolved. No invoices were sent with the loads to Mr. Neville's farm at Shenstone House, where the manure was used, and a formal application was made by the bailiff for the analysis. Thereupon a statement was forwarded for the first load showing the manure to contain ammonia $5\frac{1}{2}$ to $6\frac{1}{2}$ per cent., phosphates $5\frac{1}{2}$ to $6\frac{1}{2}$ per cent., potash 2 per cent., and saying that the manure was a chemical compound consisting substantially of animal matter. The whole of the first two-and-a-half tons were used on the Shenstone House Farm, and Mr. Neville, not being satisfied with the result, ordered an additional half-ton, notice being given to the defendants that samples of this would be submitted for analysis; and they were sent to the county analyst (Mr. E. W. T. Jones), who now stated that the substances were made up of blood and animal matters, mixed largely with shoddy, of which the outside value would be £3. per ton, and which, in his opinion, was not worth more than £2. per ton. It was, in fact, a very poor sample of manure—indeed, simply rubbish. For the defence, it was contended by Mr. Vachell that Mr. Neville had previously used the manure and had not made any complaints, and the best evidence of its utility was its popularity. The business had been carried on for twenty years with much success and with continually-increasing sales. An analysis of the manures had been made early in the season by Mr. Alfred Sibson, analytical chemist, of London, but, unfortunately, had been lost by an agent at Aldridge, to whom it had been entrusted. The manure was rich in ammonia, but was sold as material which might be improved by the addition of phosphates, which could be procured at £2. to £2. 10s. per ton—a much lower price than the manure itself could be supplied at. In reply to Mr. Fisher, Mr. Ginster, sen., who was called as a witness, said that he had the misfortune to be bankrupt twelve years ago, and that the business had since been carried on by his wife and sons, although he took an active part in the management. The second half-ton of manure was made up as a special order at the close of the season to oblige Mr. Neville, and it was not submitted to analysis by himself because sufficient time was not allowed. The Bench said that in their opinion two mistakes had been made by the defendants—one in not giving the proper details of analysis, and the other in adulterating the manure to such an extent. They therefore imposed a fine of £2. and costs on each defendant for each offence. Mr. Fisher stated that the County Council had been put to at least 15 guineas expense, and applied for an order for special costs. This the Bench acceded to, and the justices' clerk stated that the full penalties and costs would amount to £11. 6s. each, or a total of £33. 18s.

AMERICAN PAPER MAKERS' COMBINE.—The principal paper manufacturers in the United States are planning the formation of a trust for regulating the output of paper and for developing the interests of the American paper trade in foreign markets.

THE WESTRALIAN GOLD PRODUCTION.

THE West Australian Chamber of Mines has, by last mail, received from the Government Department of Mines, Perth, W.A., copy of an official return containing: (1) A table showing for each goldfield and goldfield district in the Colony the number and area of leases in force, the number of persons employed, with the quantity of ore milled and gold yielded to 30th June, 1897; (2) a return of all ore milled and gold yielded from every producing mine in the Colony to the same date, the results from each mine being set out separately; (3) a diagram illustrating the quarterly gold export from 1887 to June 30th, 1897, inclusive. The average yield per ton of ore milled previous to 1897 is shown to have been 1 oz. 10 dwts. 14 grs., as compared with 1 oz 12 dwts. 21 grs. for the first half of the current year, exclusive of rich samples or specimens. The following is a summary by fields and districts of the results for the half-year to 30th June, 1897:—

	Ore Milled.	Yield of Gold.	Average per ton
	Tons.	oz.	oz. dwt. grs.
Kimberley Goldfield ..	383½	229	0 11 23
Pilbarra Goldfield—			
Marble Bar District ..	2,489	2,637	1 1 3
Nullagine District ..	285	480	1 13 16
West Pilbarra Goldfield—			
Roeibourne District ..	193·9	277	1 8 14
Mallina District ..	20	33	1 12 21
Peak Hill Goldfield ..	965·5	3,111	3 4 10
East Murchison Goldfield ..	2,985·1	6,383	2 1 3
Murchison Goldfield—			
Cue District ..	9,553	7,331	0 15 8
Day Dawn District ..	3,747	3,185	0 17 0
Mount Magnet District ..	8,406	6,843	0 16 4
Nannine District ..	4,899	3,218	0 13 3
Yalgoo Goldfield ..	1,581·33	1,193	0 15 2
North Coolgardie Goldfield—			
Menzies District ..	13,607·4	31,342	2 6 1
Niagara District ..	4	31	7 14 9
Yerilla ..	445·5	1,081	2 8 21
Broad Arrow Goldfield ..	8,517	6,300	0 14 17
Mount Margaret Goldfield ..	235	293	1 4 22
N'th-East Coolgardie Goldfield—			
Bulong District ..	2,009·5	3,530	1 11 4
Kurnalpi District ..	158	57	0 7 5
Kanowna District ..	7,379·25	8,130	1 2 0
East Coolgardie Goldfield—			
Kalgoorlie District ..	38,365	116,802	3 0 21
Coolgardie Goldfield ..	15,832·4	24,391	1 10 2
Yilgarn Goldfield ..	18,735	8,923	0 9 12
Dundas Goldfield ..	5,723·47	5,841	1 0 9
Totals and Average ..	146,519	241,726	1 12 21

THE SAVANNAH FERTILIZER TRADE.

NOTWITHSTANDING the serious damage done to several of the fertilizer factories by last year's tornado, Savannah's manufacturers still hold their own, and more than that, they have added to their trade during the past season. During the disastrous storm which passed over the city September 29, 1896, two sulphuric acid plants were blown down, and another was seriously damaged. The wind had scarcely died out before their owners were planning and contracting for the erection on improved plans. The "acid chambers" are the foundation of the fertilizer business, and the immediate re-building and repairing of the damaged plants was induced by the bright outlook for an increased demand for Savannah-made goods. Expectations were fully realised. Savannah secured her full share of the increased demand for commercial fertilizers in the Southern states.

The amount of fertilizers consumed in Georgia alone during the season of 1895-96, as shown by the official bulletin of the State Department of Agriculture, was 335,617 tons. The official figures for the past season have not, as yet, been published, but one of the officials of the Department has stated that they would reach a fraction over 360,000 tons at about the close of the selling season.

The development of the new Tennessee phosphate fields; the practical desire to get nearer the Western packing houses, from which comes so much of the material used for ammonia in fertilizers, and at the same time, to find a near market for the output and save freights to the consumers on manufactured goods, have induced the building of a number of factories at interior points. This has very materially affected the trade of some of the coast manufacturers, but does not seem to lessen the demand for Savannah's popular brands.

The reduction in railroad freight rates on fertilizers, which came into effect about the first of last January, were due largely to the efforts of Savannah fertilizer manufacturers and dealers. It will be remembered that one of the strong points in the petition was, while nearly all

other prominent commodities had had a material reduction in freight rates during the past few years, commercial fertilizers had not enjoyed an equal reduction. Yet there is no bulky freight handled by the railroads that brings to them the after, or return than freights do commercial fertilizers.

The invention of new and improved machinery and the discovery of new sources of plant food, have gradually reduced the cost of commercial fertilizers, all of which is to the advantage of the buyer, as it induces sharp competition from those who keep their manufacturing plants and methods up to date. The manufacturers who do not move with the times, of course, must meet the prices and be satisfied with less profit.

The Savannah fertilizer manufacturers are, without an exception, of the "up-to-date" kind, being fully equipped with modern machinery.

The prices of the ingredients have not varied to any great extent from last season, except ammoniates, which have been quite stiff for several months past. Phosphate rock remains about the same price. There is no material change in the German potash salts, which furnish to manufacturers almost their entire source of potash.

The new tariff affects very few of the ingredients or materials used in fertilizers. Burlaps, from which the bags are made, and sulphate of ammonia are the principal articles affected by the Dingley Bill.

The following table shows how the transportation of fertilizers was distributed:—

Shipments of fertilizers from Savannah during season of 1896-97.

	Tons
Central of Georgia Railway Co. ..	52,623
Georgia and Alabama Railway ..	17,532
Plant system ..	20,041
Florida, Central and P. Railway ..	3,723
Savannah River boat line ..	3,000
Total ..	96,919
Total shipment 1895-96 ..	70,000

PHOSPHATE ROCK.

The amount of Florida phosphate rock exported from Savannah to foreign ports greatly exceeded that of the previous year—in fact was larger by about 30,000 tons, than in any year since the industry started. During the year fifty-two steamers took full or part cargoes. The total shipments were 99,078 tons, against 67,569 tons for the year 1895-96. Shipments were made during every month of the year except July. Of the total exports, 69,794 tons were shipped to Germany, 11,984 tons to Italy, and the balance distributed in Great Britain, France, Belgium, Holland, the Netherlands and Russia.

The following table shows the comparative amount of phosphate rock shipped from Savannah to Europe for the past six years:

	Tons.
For year ending Aug. 31, 1892 ..	9,238
For year ending May 31, 1893 ..	11,778
For year ending Aug. 31, 1894 ..	33,315
For year ending Aug. 31, 1895 ..	67,690
For year ending Aug. 31, 1896 ..	67,569
For year ending Aug. 31, 1897 ..	99,078

THE THERMAL SPRINGS OF MACHACHI.

MACHACHI is noted principally for its thermal springs which, on account of their accessibility, are much patronised by people from the interior of Ecuador. Unless one is a friend of the proprietor, the springs baths have to be taken in the open-air, which, however, is in no way detrimental to their beneficent effects. Their temperature varies between 70° and 80° Fahrenheit. The following analysis of those principally used, is from Dr. Wolf's excellent work, the "Geografia y Geologia del Ecuador," viz:—

	Per Cent.
Sulphate of potass ..	0·0850
" sodium ..	0·0852
Chloride of sodium ..	0·9454
Bicarbonate of sodium ..	2·7234
" calcium ..	0·4872
" magnesium ..	0·9486
" iron ..	traces
	5·2748

CHANGE OF ADDRESS.—Messrs. A. Gallenkamp and Co., inform us that in order to meet the steadily increasing demand for Chemical and Assay Apparatus, they have secured the lease of the extensive warehouse premises Nos. 19 and 21, Sun-street, Finsbury Square, London, E.C., within four minutes' walk from Moorgate and Broad Street stations. The new premises will allow them to increase their stock considerably, so that they will be able to execute all orders for stock goods, as per new price list, within a much shorter time.

GENERAL STATISTICS OF THE UNITED KINGDOM.

Annual compilation of statistics relating to mines and quarries in the United Kingdom in 1896 has been issued by the Office. The sources from which minerals are obtained in the Kingdom are classed under five heads:—(1) Mines under the Mines Regulation Act; (2) mines under the Metalliferous Mines Regulation Act; (3) quarries more than 20ft. deep, which are now under the Quarries Act; (4) quarries less than 20ft. deep, which are now under the Quarries Act; (5) brineworks. Except in the case of a few less important substances the present volume is an account of minerals raised from the quarries less than 20ft. It is true that the amounts of clay, brick-earth, sand, and gravel used must be large; but without further statutory powers no account of the quantity and value can be given. Thanks to the courtesy of the owners, who have furnished returns yearly, accurate statistics of the output of the shallow iron-quarries of the Midlands have been secured; and in like manner the output of salt from brineworks has been calculated. The total imports of each of the principal minerals, furnished by the Customs, are given after the tables of production, and in these tables information as to distribution, supplied by railway and other companies, is added. Lists of smelters of the principal ores follow the export and import tables, and in the case of a quantity of ore and coal used in the blast furnaces, and the pig iron, have been ascertained from voluntary returns furnished to the Home Office by the owners. The volume includes also the mines inspection districts, with the names and addresses of the proprietors of mines, assistant inspectors, secretaries to boards of directors, and the Clerk of Mineral Statistics. The return also includes a general summary of the value of minerals obtained from the Kingdom.

The figures for 1895 were:—Africa and Mediterranean, £39,874,144; Australasia, £13,019,068; Europe, £3,842,586; North America, £3,842,586; South America, £446,695; British West India Islands, £101,550.—total, £29,830,071, as against £28,765,000. in 1894.

NOTES ON FOREIGN TRADE.

ETRE was at one time imported exclusively from England and for a long time after Germany began to compete, preference was given at a higher price, to the British article. Germany has, however, considerably improved her manufacture, and, owing to lower prices, supplanting some English makes which were well known. German competition is assisted by better terms, *i.e.*, longer credit than those granted by English firms, and also better terms offered to the local agents, who thus have a greater interest in the products of that country.

AN v. AMERICAN PETROLEUM.—The Consul at Mosul states that kerosene has driven the American oil out of the market in that district. In the neighbourhood of Kerkook and Gayyara there are oil springs, which it is believed would suffice for local demands, but defective refinement of the oil is so impure that little is sold, and more expensive Batoum product continues to be imported.

LIZERS.—The sugar crop of *Motril*, near Malaga, was large in 1896. The smallness of the crop is partly due to the adulteration of the manures, owing to the great rise in price. The following guanos are employed, none being hitherto given to any particular one for the guano obtained from it: Fuente Piedra, San Gobain, Lunas, Oppos, Ollendorff, Trenor. The prices get lower each year. *Rica*, 280 tons of fertilisers, valued at £1,523, were imported. The United States sent 211 tons; Great Britain, 31 tons; France and Spain the rest.

total amount of nitrate of soda introduced into *Antwerp* in 1896 was 133,500 tons, as against 118,370 tons in 1895. The following figures show the imports of the other principal salts:—

	Quantity.	Tons.
Peruvian guano	20,000	
Phosphates	12,000	
Sulphate of ammonia	24,000	

SULPHATE.—During 1896 the imports of sulphate of copper from Italy, were 637 tons, as against 222 in 1895, and during the months of 1897, nearly 800 tons were imported, which points to the fact that growers are becoming more and more conscious of the practical utility of *bonille bordelaise* as a preventive in the treatment of phylloxera.

PAINTS IN MEXICO.—The imports of chemical products into this country amounted to £338,487. in 1896, as against £304,623 in 1895. A noticeable feature in this branch of trade was the great increase in the importation of paints and colours, which in 1895 only amounted to £27,812., while in the year under discussion it represented a value of £64,063, or more than 130 per cent. difference.

MANUFACTURE OF STARCH.—In spite of the dearness of the raw material on account of the famine in British India, the year 1896 was not an unfavourable one for *Belgian* rice starch manufacturers. The exports of starch and starch products of home manufacture amounted to 6,329 tons.

CITRIC ACID.—A factory for the manufacture of citric acid and oil of lemon was established at *San Diego* during 1896. It takes from four to six weeks to condense the juice of 60 to 70lbs. of lemons into 1lb. of acid. The factory employs seven hands, has steam works, and a capacity for 40,000 lemons a week; only culls are used. The same company also makes oil of lemon.

Trade Notes.

THE BARROW SALT CO.—This company has commenced operations on the enormous salt deposits on Walney Island. The brine is being pumped, and already over a thousand tons of salt have been made. Four large pumping engines have been put down, and the plant is capable of turning out 50,000 tons of salt per annum. The company also propose to erect chemical works on a large scale.

PETROLEUM FATALITY.—A death from burns resulting from a petroleum lamp explosion occurred at Widnes hospital about ten o'clock on Monday night, the victim being Thoms Condron, aged 24, Grove-street, Widnes. The deceased went home early on Monday morning. A paraffin lamp had been left lit in the kitchen for him, the rest of the family having gone to bed, and while he was turning out the light the wick slipped down into the oil, and the lamp exploded, burning him frightfully.

EXPLOSION OF A NAPHTHA LAMP.—On Wednesday, Mr. Butcher, coroner for South-West Lancashire, held an inquest at Horwich on the death of George Musgrave, 38, fitter, Lancashire and Yorkshire Railway engine works. Musgrave was employed in the engine erecting shop. On Thursday, last week, he was using a compressed air naphtha lamp, which exploded, and a gallon of naphtha enveloped him in a sheet of flame. His injuries were dreadful, and he died on Monday morning. One lamp had burst previously, but no one was injured. A verdict of accidental death was returned.

FIRE AT A RUBBER WORKS.—A fire occurred this week, at the Greengate Rubber Works, owned and occupied by Mr. Isidor Frankenburg. Mr. Superintendent Bentley and the full strength of the brigade, taking with them four tenders, two escapes and two steamers, turned out, and on arrival at the works a few minutes afterwards found a fire burning fiercely in the basement. The room is used as the rubber printing department. The firm's private brigade had got a jet to work, and this was supplemented by several others from the mains. Owing to the room being fireproof, and the arrangements the firm had made for the removal of casks of naphtha, &c., stored in the room, the brigade were successful in keeping the flames confined to the room in which they had broken out. The fire is supposed to have been caused by the friction of the machinery. The damage done will amount to about £300, which is covered by insurance.

PARAFFIN WAX IN CONFECTIONERY.—In connection with the Confectioners' Exhibition at the St. James's Hall, Manchester, a meeting of manufacturing and wholesale confectioners was held in the smaller hall on Wednesday, under the auspices of the Manchester and District Confectioners' Association. The chairman, Mr. J. Scholes, said that recently they had seen in the newspapers reports of cases where persons had been convicted for selling confectionery covered with paraffin wax. In several instances the defendants had made the excuse that they were not the manufacturers, but that the articles came from Manchester. He had made extensive inquiries with regard to this matter, but could not find that the practice of using paraffin wax in confectionery prevailed in this district. Dr. Goodfellow, analyst to the Confectioners' Association of the United Kingdom, in the course of an address on "The employment of beeswax in confectionery," said that he had to deal with a large number of samples of confectionery week by week, and he did not believe the use of paraffin wax was at all extensive in the trade. He had come across one or two samples in which it was used, it was true, but his larger experience was that it was not used to any great extent. There was no doubt that, except in very minute proportions, it was decidedly injurious, and he recommended the substitution of beeswax.

BARIUM WORKS IN THE STATES.—The Barytes Chemical Company of Lynchburg, Va., U.S.A., organised for the purpose of mining and manufacturing barytum salts, will erect a plant at once for this purpose.

THE LAXEY MINING DISASTER: REWARDS FOR EXPLORERS.—At the request of the Prince of Wales, Lord Henniker, Governor of Man, on Saturday, presented two medals and diplomas of the Grand Order of St. John of Jerusalem in England to Mr. Griffiths George Williams, mine inspector, Llandudno, and Captain John Kewley, underground manager of Snaefell Lead Mine, Laxe, for deeds of gallantry in saving lives. The recipients were the leaders in the rescue work following the disaster in May last, Captain Kewley descending the shaft no fewer than eleven times. (*Vide C.T.J.*, 523, p. 366, and 527, p. 425.)

BENZOLINE FATALITY AT LANCASTER.—An inquest was held at Lancaster recently respecting the death of Thomas Hawton, dyer's presser, who was shockingly burned by an explosion of benzoline at a Lancaster dye works. Hawton applied the benzoline to take out grease spots from his clothing, dipping the cloth in a vessel containing two quarts. There was no gas or fire in the room. Mr. Harrison, who supplied the benzoline, said the explosion most probably occurred through rubbing cloths saturated with benzoline. A verdict of accidental death was returned. Mr. Law, factory inspector, attended the inquest.

ACCIDENT AT A CHEMICAL WORKS.—On Saturday afternoon, an accident, which resulted in the death of one man and injury to others, occurred at the chemical works of Messrs. Bowman, Thompson, and Company, Limited, Lostock Gralam, near Northwich. Four or five labourers were employed upon an elevated platform, when, without any warning, the piling at the foundation gave way, and part of the structure collapsed. John Joyce, a chemical worker, aged about 30 years, was precipitated into a lime cistern, while the other men were thrown to the ground. Endeavours were at once made to rescue Joyce, but they were fruitless.

SERIOUS SUBSIDENCE AT NORTHWICH.—A somewhat serious subsidence occurred this week in the vicinity of Verdin Park, Northwich. A building now used as a furniture warehouse by Mr. Earlam, of Castle-street, suddenly collapsed, the greater portion of the front wall and all the roof falling with a crash, the noise being distinctly heard in London-road, a quarter of a mile away. Fortunately no one happened to be in the structure at the time, otherwise the consequences might have been serious. A quantity of furniture was smashed. During the past few days depressions have been noticed in the principal roadways in the town.

Obituary.—Mr. Benjamin Brewster, whose name has been associated with Standard Oil Company affairs more or less prominently, died recently at his summer home at Cazenovia, N.Y. He was stricken with apoplexy some two weeks previously, and never quite recovered, his death, however, being rather unexpected. Mr. Brewster was 69 years of age, and was a lineal descendant of Elder Brewster, who came over on the *Mayflower*. He was closely associated with John D. Rockefeller in the establishment of the Standard Oil Company, and was prominently identified with the building of the elevated railroad in New York, and in the construction of the Rock Island and Chicago and St. Paul and Minnesota railroads.

THE NORDENFELDT-VICKERS AMALGAMATION.—With the view to extending its field of operations so as not to depend upon one particular class of manufacture, the Maxim-Nordenfeldt Company have entered into a provisional agreement with Messrs. Vickers, Sons & Co., the well-known steel manufacturers, gun-makers, and shipbuilders, of Sheffield and Barrow-in-Furness, for the amalgamation of the two companies, and a general meeting of the shareholders was held in London this week for the purpose of confirmation, Admiral of the Fleet, Sir J. A. Commerell, V.C., G.C.B., occupying the chair. The agreement provided that the undertaking of the Nordenfeldt Company should be vested in the Vickers company as from the 30th September, 1896, in consideration of 700,000 fully-paid second preference shares of £1. each, and 233,334 fully-paid ordinary shares of £1. each of that company, and five per cent. on the existing capital to be paid the Vickers Company. The Chairman described the terms of the amalgamation, and said that he supposed it was the first time in history that a firm such as theirs could lay down the keel of a line of battleship, fit her with armour plate, arm her with the strongest and finest quick-firing and machine guns, and supply her with ammunition entirely at one works. In fact, from the moment she was laid down at Barrow-in-Furness every single thing would pass through the hands of Vickers and Maxim. Was not that, he asked, a most desirable object to attain? When the present strike had terminated there was no reason why this company should not be one of the grandest combinations ever formed. The Hon. Algernon Mills seconded the resolution for amalgamation, and after a vigorous criticism from Admiral Field and other shareholders it was carried.

MANGANESE SILVER.—A substitute for German silver can be made by the use of manganese, the different metals and their proportions being as follows:—Copper, 67.25%; manganese, 18.50%; zinc, 13.00%; aluminum, 1.25%. The colour of this metal is said to be very good, resembling German silver closely. It is fully as strong as the best German silver, and has superior casting qualities, which will be appreciated by foundrymen who have experienced some of the difficulties in casting German silver. It does not corrode as readily as either German or nickel silver. A test of the electrical resistance of this metal shows its resistance to be nearly four times greater than that of German silver, and is, therefore, a matter of importance where a metal of very high electrical resistance is required.

BLACK SMOKE PROSECUTIONS.—At the Manchester City Police Court, on Wednesday, before Messrs. T. Middleton and J. M. Elliott, the Lord Mayor, Aldermen, and citizens of Manchester, were summoned for creating a nuisance by permitting the emission of black smoke from a chimney in connection with one of the retort houses at Bradford-road gas works. Mr. A. T. Rook, superintendent of the Sanitary Department, explained that the proceedings instead of being taken as usual by the Sanitary Committee as the sanitary authority, were taken by an inspector as an inhabitant of the city, and the information had been laid by him under section 105 of the Public Health Act. Under this section the magistrates could make an order without the preliminary notice which was required when the proceedings were instituted by the local sanitary authority, and in case of disobedience of the order penalties could be enforced in the usual way. He understood it was not the intention of the Gas Committee to oppose the making of the order, as they had no desire to be treated differently from other people who were frequently summoned therefor this offence. Moreover, they admitted that there was no necessity for the existence of the nuisance, which arose solely from the neglect and carelessness of their workpeople. The bench made the order as applied for. Proceedings were taken against nine other firms.

OXYGEN FOR ULCERS.—Dr. George Stoker's method of treating suppurating ulcers with oxygen gas has found favour with the Government. It seems that a very large number of the men at work on the Mombasa and Uganda Railway have been incapacitated by ulcers of the leg. The Foreign Office sent a medical man to the Oxygen House to study the principles and practice of Dr. Stoker's method, and have now sent to Mombasa twenty complete equipments for treatment. The result will be watched with considerable interest. The treatment is simplicity itself. It consists in enclosing the ulcerating leg or limb in a box or bag closed at the open end by an indiarubber funnel, which clasps the limb at the small end. Oxygen gas, more or less diluted, is then admitted into the box or bag, and is thus brought into direct contact with the suppurating surface. Cessation of pain, the substitution of healthy granulations for unhealthy ulcerations, and rapid healing and skinning are all claimed for the new process. Certainly there are many patients in the House who tell piteous stories of how for many years they had suffered, and say that recovery from a dreadful disease is now taking place under the health-giving influence of oxygen. One case is particularly interesting to those who wish to lighten the burden of the rates. It is that of a man who for 30 years had been rendered a pauper through ulcerated legs. During his time he has cost the unfortunate ratepayers of his parish over £1,000. He was taken into the Home, and in a few months, at a cost of only £10. for maintenance, he has been cured.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols keep steady, and a fair amount of business has been done at 2s. for 60's and 2s. 1d. for 50/90's, though buyers as a class are not disposed to deal freely. Carbolic acids are firm, but there are no quotable changes in prices. Naphthas are in much the same position as last quoted, without alteration in values. Naphthalene is a good market, particularly pressed crude. Anthracene is a trifle firmer at 5½d. to 6d. for 30% A and 4½d. for B. Pitch quiet at 19s. to 20s. 6d., f.o.b. East Coast.

Sulphate of ammonia has been in fairly good request for prompt delivery, and some good prices have been paid in some cases. In the forward position there has also been more doing, at a satisfactory premium on spot values. The market closes firm, but a little quieter, with Beckton at £8., London outside makes £8. 2s. 6d., Liverpool £8. 3s. 9d. to £8. 5s., Hull £8. 2s. 6d. to £8. 3s. 9d., and Leith £8. 3s. 9d. to £8. 5s., all prompt. Nitrate of soda dull at 7s. 4½d. to 7s. 7½d. per cwt.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade business continues moderately good, with fair enquiry for future deliveries. Some considerable business has already

been done for 1898 on the basis of existing prices. Ammonia soda is steady at £3. 17s. 6d., bags, f.o.r., both prompt and forward. Caustic soda is maintained at the current rates, viz.—f.o.b. Liverpool, 77%, £9; 74%, £8. 10s.; 70%, £7. 10s.; 60%, £6. 10s. nett per ton, 10 ton lots. Leblanc soda ash very quiet and nominally 1d. to 1½d. per degree, f.o.b. Soda crystals and bicarbonate have undergone no change. Bleaching powder in fairly active demand at £6. 7s. 6d., f.o.r., and £6. 10s. to £6. 12s. 6d., f.o.b. Forward contracts over 1898, £6. 5s., f.o.r., and price is firm at that for best makes. Chlorates quiet, and quotations are fractionally easier. In Sulphate of copper there is good business doing for present and forward delivery at £16. 15s. to £17., f.o.b. Sulphur steady at £4. 10s. to £4. 12s. 6d. per ton. Saltcake more active at 19s. to 20s. For vitriol and muriatic acids there is continued fair demand. Potash, caustic, and carbonate are unchanged at recent prices. Brown acetate of lime firmer at £5. 7s. 6d., c.i.f. Acetate of soda depressed by excessive stocks. Other acetates quiet. Acetate of lime firm, and other lead salts are higher. Prussiate of potash unchanged at 5¼d. per lb. Cyanide 10½d. per lb. Sulphocyanides dull. White powdered arsenic unaltered in position or value. Nitrate of soda quiet at 7s. 4½d. to 7s. 6d. per cwt.

THE METAL MARKET.

LONDON, WEDNESDAY.—Fig iron: Scotch warrants closed at 44s. 5d.; Middlesbro', 42s. cash; and hematite, 47s. 1½d. Copper easy: Chili bars, G.O.B.'s and G.M.B.'s, closed at £49. 3s. 9d. to £49. 8s. 9d. cash, and £49. 11s. 3d. to £49. 16s. 3d. three months. Tin quiet: Straits closed at £61. 13s. 9d. to £62. 3s. 9d. cash, and £62. 5s. to £62. 15s. three months. Australian £62. 10s.; English ingots, £65. 10s. Lead steady: Spanish, £13. 15s. 2d. to £13. 17s. 6d. English, £14. Silesian spelter, ordinary, £17. 17s. 6d. Nickel, 1s. 2½d. Antimony, £29. to £29. 10s. Quicksilver: First hands, £6. 15s.; second hands, £6. 14s. 6d. Copper shares quiet: Cape, 2½ to 2¾; Copiapo, 1¾ to 2½; Libiola, 2½ to 2¾; Mason and Barry, 2¾ to 3; Rio Tinto, 2¼ to 2½; Tharsis, 6½ to 6¾.

GLASGOW, WEDNESDAY.—Market firm, and a moderate business. Scotch done at 44s. 4½d. to 44s. 5d. cash; and 44s. 7d. one month; buyers, 44s. 5d. cash; sellers ½d. more Cleveland done at 42s. cash; buyers, 42s. cash; sellers, 42s. 0½d. Cumberland hematite, done at 47s. 1½d. cash; and 47s. 4d. one month; buyers, 47s. 1½d. cash; sellers 47s. 2d. Middlesbrough hematite, buyers, 48s. 6d. cash; sellers, 49s.

REPORT ON MANURE MATERIAL.

There has been no fresh feature to comment upon, business on the whole having been quiet. Quotations for high grade mineral phosphates are very firm, their being good demand at full prices for the Continent and Baltic. In South Carolina and 58/63% Algerian there is a fair business doing at 5d. per unit, c.i.f. to good U.K. ports. In the absence of cargoes offering, value of River Plate bones must be put at about £3. 13s. 9d. per ton. The higher price demanded for East India bone meal for shipment, £3. 17s. 6d. per ton, is standing in the way of business, and sellers will have to make some concession in order to secure orders. In the meantime, crushed Kurrachee bones in store hang fire at £3. 17s. 6d. per ton. Nitrate of soda remains very quiet in all positions, the closing quotation on spot being 7s. 4½d. per cwt. for ordinary to 7s. 6d. for fine quality. There is very little doing in cargoes afloat or for shipment owing to abundance of supplies.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—There is but little doing in palm oil, chief business being in small sales of Benin at £18. 5s., quay. Olive is strong, and in satisfactory request, a state which is likely to prevail while supplies are so short. Linseed is quiet, with Liverpool makes at 16s. 3d. to 18s. per cwt. in export casks. Cottonseed shows signs of weakness, but prices remain at 16s. 6d. to 17s. 6d. per cwt. for the present. Castor oil is firm and well held; good seconds Calcutta is quoted 3½d. per lb., and first pressure French 3½d. to 3¾d. per lb., though sulphur seconds have been done at 3d. There is not much doing in tallow, which remains steady as regards price. Resin is in better request again, and pale grades are inclined to be firmer at 6s to 7s. 4d. per cwt. Spirits of turpentine are decidedly stronger, and are now quoted 24s. 3d. per cwt., with a fair business doing thereat. Petroleum dull: American 5¼d. to 7d. and Russian refined 5d. per gallon.

CAKES.—West American linseeds are easier at £5. 16s. 3d. to £6. 3s. 9d., but there is no change in Liverpool makes, which are in fairly good demand thereat. Decorticated American cottonseeds are firm, especially choice brands, which are in moderate demand at £5. 15s. to £6. 5s.; Liverpool makes steady at £6. 5s. to £6. 7s. 6d.

Undecorticated are also moving nicely at £4. 1s. 3d. to £4. 10s., according to brand. Egyptians are lower, owing to arrivals, but the drop to £3. 17s. 6d. has been attended by a brisker demand.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire—common £10., medium £12., best £15.; Derbyshire—common 40s., medium 50s., best 60s.; Welsh—best 90s., seconds 50s., and common 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead: £16. Red lead unchanged. Venetian red: £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide: £22. 10s. to £25.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

In mineral oils (burning) the Scotch companies have been booking freely for the winter supply of their customers at the late reduction, as given below, but subject to further lowering should the market give way seriously any further during the course of the season. Lubricating oil is a little slacker in the lighter sorts, but the top gravities retain all their strength and hold late prices well. Paraffin spirit is in increased demand as a solvent for various manufactures, and the quotation is a shade higher. The market for ordinary chemicals is pretty active. Soda crystals keep scarce, and there has been an advance on the export quotation. Sulphate of copper has made a further advance to about £16. 12s. 6d.; but the boom in lead products seems to have slowed down a bit. During the week sulphate of ammonia fully held its own. Higher prices were paid, and makers are in the hope of still better things.

Chief prices current are:—Soda crystals, £2. 12s. 6d., nett, Tyne, soda ash, 48/62°, £4. 2s. 6d. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £4. 17s. 6d. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 10s., 70/72° £7. 10s., 60/62° £6. 10s., and cream 60/62° £6. 5s. all nett, Liverpool; bleaching powder, 35/37°, £6. 5s. nett, Tyne; saltcake, 19s.; borax English, refined, £14. 15s. and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4d. less 5%, any port; nitrate of soda, 7s. 4½d. to 7s. 9d.; sulphate of ammonia, £8. 5s. to £8. 7s. 6d. prompt, f.o.b. Leith; sal ammoniac, first and second white, £33. and £31. nett any port; sulphate of copper, £16. 7s. 6d. to £16. 12s. 6d., less 5% Liverpool; paraffin scale, hard, 1¾d. to 1½d., per lb., soft 1½d. per lb.; paraffin wax, 120° semi-refined, 1¼d. to 2d. per lb.; paraffin spirit (naphtha), 6½d. to 7d. per gallon; paraffin oil (burning), No. 1, 5¼d., and crystal, 6d., at Glasgow and other big centres, for Scotch buyers (English sales a shade lower); ditto (lubricating) 86° £4. 15s. to £5. 5s., 88° £5. 15s. to £6. 5s., and 89/89½° £6. 10s. to £7. Week's imports of sugar at Greenock were nil.

TYNE CHEMICAL REPORT.

TUESDAY.

The chemical market continues fairly steady, and there is a good demand for soda crystals and soda ash. Bleaching powder is quoted at £6. 5s. to £6. 10s. per ton. Sulphur scarce at £5. per ton. Soda crystals £2. 12s. 6d. per ton, gross weight, locally.

Bleaching powder, softs, £6. 10s. per ton, nett; hard, £6. 15s. per ton, nett; caustic soda, 70% £7. 10s., and 76/77% £9. per ton; recovered sulphur, 2 cwt. bags, £5. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. 6d. per ton, nett; do., 52%, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95% crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham salt steady at 9s. 6d. per ton, f.o.b. Tees.

COALS.—Trade continues fairly steady, and there is a good demand for gas and steam coals. House coals are also going into consumption more freely. Coke in strong demand. Best Northumbrian steam, 8s. 6d. to 9s. per ton; second qualities, 7s. 6d. to 8s. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; gas coals, 7s. 9d. to 8s. 3d. per ton; household coals, 10s. to 11s. per ton; coke, firm, 20s. to 21s. per ton.

New Companies.

Wort and Co., Ltd.—CAPITAL £1,800. in £1. shares. This company has been formed to adopt an agreement with J. Shepherd and W. Wort, and to manufacture, sell, and deal in gelatine and all products of bones. The number of directors is not to be less than 2 nor more than 5; the first are W. Wort and G. Wort.

Fumelessite, Ltd.—CAPITAL £17,500. in £1. shares. This company has been formed to acquire, develop, and turn to account certain patents and rights granted to H. Boyd for improvements in explosives, and to adopt a certain agreement. The subscribers to the memorandum of association are:—D. Forde, Claremont House, Wimbledon, C.A.; F. Campbell, 16, Beaufort Gardens, S.W., captain; R. Elliott, 26, Wellington-street, W.C., agent; J. S. Chisholm, 16, Queen's Grove, Bedford Park, solicitor; G. Cox, 3, Salters' Hall Ct., E.C., solicitor; H. A. Moore, 16, Downs-road, Clapton, clerk; F. H. Macly, 7, Holland-road, Kensington, contractor. Registered office, Bush Lane House, Cannon-street, E.C.

R. Dixon and Co., Ltd.—CAPITAL £10,000. in £5. shares. This company has been formed to acquire the business of "R. Dixon and Co.," and to carry on the business of hard and dry soap manufacturers, manufacturing chemists, druggists, drysalts, etc. The subscribers to the memorandum of association are:—R. Dixon, 63, Percy-street Rochdale, soap manufacturer; H. Dixon, 50, Willeth Lane, Rochdale, soap manufacturer; A. Hoyle, 18, The Walk, Rochdale

accountant; C. Teale, 41, Roch-street, Rochdale, cashier; Mrs. A. A. Haggerty, 63, Percy-street, Rochdale; Mrs. B. Dixon, 63, Percy-street, Rochdale; Mrs. L. Dixon, 50, Willeth-lane, Rochdale.

Bellevue Petroleum Co., Ltd.—CAPITAL £220,000. in £1. shares (20,000 preference). This company has been formed to adopt agreements with E. D. Chadick and J. M. Macalaster, and to produce, store, refine, supply and manufacture mineral oils and petroleum products. The subscribers to the memorandum of association are:—P. Loring, 103, St. James-road, S.E., clerk; W. Perryman, Bullingham Mansions, Kensington, clerk; J. H. Matthews, 23, Barry-road, Stonebridge Park, N.W., gentleman; H. M. Ugena, 44, Russell-road, Holloway, N., clerk; E. Horswell, 72, Farringdon-street, E.C., clerk; J. L. Moore, 29, Church-road, Seaforth, near Liverpool, clerk; A. A. H. Lew, 5, Kimberley-road, Clapham, S.W., clerk.

Burnden Tar Co. (Bolton), Ltd.—CAPITAL £10,000. in £10. shares. This company has been formed to enter into a certain agreement and to carry on the business of chemical manufacturers, manufacturing chemists, and tar oil distillers and manufacturers. The subscribers to the memorandum of association are:—J. Anderson, sen., The Grange, Clayton, Manchester, manufacturing chemist; J. Anderson, jun., Mayfield Avenue, Gt. Lever, chemical manufacturer; Mrs. E. Anderson, Mayfield Avenue, Great Lever, chemical manufacturer; W. Hutchison, 74, Manchester-road, Bolton, chemical manufacturer; Mrs. E. Hutchison, 74, Manchester-road, Bolton; A. Tongue, 86, King-street, Manchester, F.C.A.; G. E. Lund, 7, Brazennose-street, Manchester, solicitor. Registered office, Burnden, Bolton.

IMPORTS OF CHEMICAL PRODUCTS

AT
THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending September 18th.

Acetic Acid—
Holland, 73 pks. A. & M. Zimmermann
" 30 Hernu, Peron & Co.

Acetone—
Holland, 2 drs. G. Rahn & Co.
Germany, 8 J. M. Steel & Co.

Alkali—
Holland, 20 c. J. Barber & Co.
Belgium, 14 T. H. Lee

Arsenic—
Portugal, 34 brls. Coverley & Westray

Asbestos—
U. States, £33 W. Byford
Germany, 18 Craven & Co.
N. Russia, 200 Bailey & Leatham, Ld.
Italy, 369 Capt. Tucker

Barytes—
Belgium, 70 brls. A. Zumbach & Co.
" 77 W. Harrison & Co.
Holland, 40 cks. D. Storer & Sons
" 53 200 bgs. W. Harrison & Co.

Barytes—
Germany, 52 10 brls. J. L. Lyon & Co.
Belgium, 41 Burrell & Co.
" 200 bgs. O'Hara & Hoar
" 250 67 Union Lige. Co.
Belgium, 20 cks. Ld.

Camphor—
Germany, 16 cs. C. S. Lovell

Caoutchouc—
Singapore, 3 cs. McIlwraith & Co.
U. States, 7 L. & I. D. Jt. Co.
Germany, 62 T. H. Lee
" 20 Prop. Bull. Wf.
Penang, 407 E. Boustead & Co.
Natal, 30 Brookes & Green
" 30 F. W. Bowyer & Co.
Inhabane, 30
France, 105 Huttenbach & Co.
Aden, 8 S. Figgis & Co.
Germany, 13 Drolenvaux & Bremner

Carbolic Acid—
Holland, 90 pks. J. G. Back

Castor Oil—
Germany, 1 uk. W. Balchin, Ld.
France, 14 L. & I. D. Jt. Co.
Belgium, 56 brls. J. T. Morton
Italy, 40 cs. Barron, Harveys & Co.

Caustic Potash—
France, 8 drs. J. A. Reid
Canada, 44 c. Charles & Fox

Caustic Soda—
Germany, 10 cs. Philipps & Graves
Chemicals (otherwise undescribed)
Germany, £77 Philipps & Graves
Belgium, 210 T. H. Lee
" 9 T. Palmer
Holland, 11 Petri Brs.
Germany, 125 T. H. Lee
Holland, 21 H. Johnson & Sons
" 29 Typke & King
U. States, 8 Neale & Wilkinson
Holland, 10 W. Gerson & Co.
" 35 T. H. Lee
Belgium, 12 John Cockerill Line
Germany, 40 H. Lambert
" 195 L. & I. D. Jt. Co.
Norway, 46 W. Candery & Co.
Germany, 1,050 A. & M. Zimmermann

Citric Acid—
Germany, 20 pks. A. & M. Zimmermann

Cream of Tartar—
France, 11 cks. C. Atkins & Nisbet
Spain, 10 W. C. Bacon & Co.
France, 3 L. & N. W. Ry.
" 5 B. & F. Wf. Co.

Dextrine—
Germany, 20 bgs. M. D. Co.

Dyestuffs—
Aniline
Holland, 58 pks. Hernu, Peron & Co.
Belgium, 18 W. Gerson & Co.
Argoia
Cape, 10 bgs. Findlay, Durham & Co.
Italy, 767 B. Jacob & Sons
Cochineal
Canaries, 15 bgs. W. M. Smith & Sons
" 9 Swanston & Co.

Cutch
Belgium, 100 cs. Becker & Wagner
Extracts
France, 25 cks. Beresford & Co.
Belgium, 30 L. J. Levinstein & Sons
" 39 Leach & Co.
France, 34 L. J. Levinstein & Sons
Germany, 38 Hoare, Wilson & Co.
Denmark, 2 brls. M. D. Co.
Canada, 40 cks. Furness, Withy & Co.

Gambler
Singapore, 502 bls. Hicks & Ashmore
Myrabolams
E. Indies, 2,500 pkts. P. & O. Co.
Orchella
E. Indies, 7 bls. R. G. Hall & Co.
Shumac
Italy, 100 bgs. H. Johnson & Sons

" 1,000 Beresford & Co.
" 5,350 J. Graves
" 950 W. Shelcott
" 365 T. S. Harris & Co.
" 1,500 Bevington & Sons
" 2,401 J. W. Cook & Co.

Tanners' Bark
Adelaide, 49 t. Baxter & Hoare
Natal, 11 A. & W. Nesbitt
" 5 Goad, Rigg & Co.

Valonia
A. Turkey, 5 t. W. H. Mitchell
" 63 100 c. A. & W. Nesbitt
" 125 Hicks, Nash & Co.

Farina—
Holland, 100 bgs. J. Barber & Co.
U. States, 32 cs. A. F. White & Co.

Gamboge—
Singapore, 1 cs. C. Le Personne & Co.

Glucose—
U. States, 250 pks. 250 c. Williams, Torrey & Co.
Canada, 1,501 1,501 J. Parsons
Germany, 2 9 L. & I. D. Jt. Co.

U. States, 353 353 Pearce, Pelly & Co.
" 60 260 L. Norman & Co.
" 2,250 2,250 Beresford & Co.
Canada, 4,229 4,229 R. G. Hall
U. States, 100 600 Deering & Robottom

" 100 600 E. & T. Pink
Germany, 14 115 J. Knill & Co.
Belgium, 14 132 J. Barber & Co.

Glue—
Germany, £26 Philipps & Graves
" 21 L. & I. D. Jt. Co.
Dunedin, 22 T. J. & T. Powell
U. States, 23 Armour & Co.
" 5 Pickford & Co.
France, 14 Mory & Co.
Germany, 500 Deering & Robottom
Belgium, 59 Sawyer, Sons & Co.

" 364 J. Barber & Co.
Holland, 21 G. Rahn & Co.
France, 52 J. Harrison
U. States, 50 W. Wingate & Co.
" 50 L. & I. D. Jt. Co.
" 9 B. Galloway

Infusorial Earth—
Germany, £50 T. H. Lee

Lamp Black—
U. States, 72 hds. J. Melvin

Lead Acetate—
Germany, 6 cks. R. W. Greeff & Co.

Litharge—
Germany, 30 cks. Petri Brs.
Holland, 5 J. Owen

Manganese Ore—
Holland, 10 c. J. Barber & Co.

Manure—
Germany, 50 t. Humphrey & Co.
Belgium, 5 T. H. Lee
Germany, 50 F. W. Berk & Co.

Methyl Alcohol—
Holland, 24 cks. Domeier & Co.
" 19 dms. A. H. Wintersgill
France, 20
Holland, 8 W. S. Barber
Belgium, 9 T. Jones & Co.

Mica—
E. Indies, £620 W. M. Smith & Sons
U. States, 335 C. T. Ward
Ceylon, 225 E. Davis & Co.
Adelaide, 390 Major & Field

Molasses—
U. States, 147 pks. 605 c. W. Balchin
" 67 385 W. G. Jacobs

Ochre—
France, 4 cks. O'Hara & Hoar
" 21 W. V. Robinson & Co.
Holland, 19 pks. Philipps & Graves
France, 3 cks. J. Harrison
" 288 W. Harrison & Co.
" 233 J. L. Lyon & Co.

Phosphate Rock—
Belgium, 230 t. Lawes Chemical Manure Co.
Algeria, 1,350 Odams Manure & Chemical Co.

Plumbago—
Germany, 3 cks. 10 pks. T. H. Lee
" 21 J. Thredder, Son, & Co.
" 89 B. Galloway
Ceylon, 20 Montgomerie & Workman

Potassium Bicarbonate—
Holland, 20 kgs. A. & M. Zimmermann

Potassium Binoxalate—
Holland, 10 cks. R. W. Greeff & Co.

Potassium Carbonate—
Germany, 427 c. Gas Light & Coke Co.
Belgium, 100 F. Smith
Germany, 150 Petri Brs.
" 120 R. W. Greeff & Co.
France, 70 J. A. Reid

Potassium Oxalate—
Holland, 20 cks. R. W. Greeff & Co.

Potassium Oxymerlate—
Sweden, 150 kgs. G. Boor & Co.

Potassium Sulphate—
Germany, 100 bgs. Bessler, Waechter, & Co.

es—
100 t. Anderson, Anderson,
& Co.
ates, 599 brls. Prod. Brokers' Co.
1,250 T. Nickels & Co.
200 H. Hill & Sons
250 F. & S. Chiesman
& Co.
Oil—
ce, 50 brls. Barrett, Tagant,
& Co.
etre—
any, 12 cks. L. & I. D. J. Co.
um, 400 c. Sawyer, Sons, & Co.
m Carbonate—
um, 400 c. R. Waters
m Prussiate—
um, 57 cks. Blagden, Waugh,
& Co.
h—
any, 750 pks. Horne & Co.
nd, 1,712 cs. Little & Johnston
da, 200 bgs. R. G. Hall & Co.
nd, 161 cs. Hernu, Peron, & Co.
195 Phillips & Graves
any, 46 T. H. Lee
um, 80 cs. Sawyer, Sons, & Co.
e, 392 F. Claydon & Co.
e, 219 W. E. Cole
um, 617 T. H. Lee
e, 410 Becker & Wagner
e, 200 Prprs. Dowgate Dk.
ates, 15 L. & I. D. J. Co.
um, 68 Leach & Co.
495 E. & T. Pink
ne—
um, 63 bgs. Sawyer, Sons, & Co.
188 H. Hill & Sons
50 Kumpf & Eckenstein
nd, 88 cks. Palmer & Co.
um, 63 bgs. W. H. Mitchell
e, 310 G. Boor & Co.
ic Acid—
m, 40 pks. B. & F. Wf. Co.
e, 17 F. C. Devon & Co.
id, 3 Blackmore Leconte
5 B. & F. Wf. Co.
arine—
nd, 11 pks. Phillips & Graves
m, 5 W. Harrison & Co.
ny, 17 Steinhoff, Sons, & Co.
d, 40 cks. Hernu, Peron,
& Co.
h—
es, 20 pks. C. Judson Avenue
Co.
1 W. E. Peck & Co.
ris—
10 cks. Williams,
Torrey, & Co.
Lead—
n, 56 cks. J. L. Lyon & Co.
95 T. & W. Farmiloe, Ltd.
y, 53 D. Storer & Sons
18 Taylor Brs.
25 W. A. Rose & Co.
50 Phillips & Graves
20 Burrell & Co.
28 T. & W. Farmiloe, Ltd.
ulp—
350 pks. J. Owen
400 Ekman Pulp &
Paper Co.
25 C. S. Lovell
240 Henderson, Craig,
& Co.
270 E. J. & W. Goldsmith
3,461 F. Claydon & Co.
y, 20 Bailey & Leatham
429 Tough & Henderson
9,395 W. D. Cook
107 Thames S. T. & L. Co.
13 Allan Brs. & Co.
2,038 E. J. & W. Goldsmith
ide—
50 brls. M. Ashby, Ltd.
180 Burrell & Co.
30 cks. Soundy & Sons
90 Prprs. Dowgate Dk.
59 Brit. Anti-Fouling Co.
9 J. Matton
98 J. Owen
350 brls. M. Ashby, Ltd.

LIVERPOOL.

Week ending September 16th.

Acetic Acid—
Rotterdam, 10 balloons
Alumina Sulphate—
Antwerp, 25 cks.
Barytes—
Antwerp, 33 cks. 50 bgs.
Amsterdam, 35
Rotterdam, 21 20
Bone Ash—
Campana, 651 bgs. J. Nelson
Zarate, 346 & Sons, Ltd.
Boracic Acid—
Leghorn, 5 cks.
Castor Oil—
Genoa, 10 cs. C. Schroeder
" 10 & Co.
Caustic Soda—
Barcelona, 1 brl. United Alkali
Co.
Chrome Ore—
Baltimore, 22 cks. P. R. McQuie
& Son
Cobalt Oxide—
Rouen, 8 cs. Co-op. W'sale
Society, Ltd.
Cod Oil—
Hamburg, 6 brls.
Cottonseed Oil—
New York, 150 brls.
Cream of Tartar—
Bordeaux, 24 cks.
Dyestuffs—
Cochineal
Teneriffe, 50 bgs. Brown & Co.
Las Palmas, 8 Sperling & Williams
Cutch
Rangoon, 860 bxs.
Fustic
Kingston, 517 ps. E. Chaloner
& Co.
Tampico, 2,225 Heaven Wedemeyer
Madder
Constantinople, 60 bgs.
Orchella
Coquimbo, 3 bls. Schutz & Co.
Saffron
Valencia, 1 pk.
Shumac
Sfax, 42 bgs.
Palermo, 3,580 630 bls.
Valonia
Syrac, 520 bgs. R. Shaw, Ltd.
Smyrna, 250
Farina—
Stettin, 50 bgs.
French Chalk—
Leghorn, 5 cs.
Glucose—
Dunkirk, 1,488 bgs.
Glue—
Rouen, 12 pks. R. J. Francis
& Co.
" 61 cks. Co-op. W'sale
Society, Ltd.
Rotterdam, 12
Lithopone—
Rotterdam, 12 cks.
Manganese Ore—
Visagapatam, 1,000 t. Darwen &
Mostyn Iron Co.
Methyl Alcohol—
Antwerp, 1 ck.
Mineral White—
Trieste, 50 bgs.
Paint—
New York, 1 brl. R. W. Black-
well
Paraffin Scale—
New York, 30 brls. Thompson
& Bedford
Phosphoric Acid—
Bremen, 15 cks.
Potash—
Dunkirk, 20 dms. Bancroft
& Co., Ltd.
" 17
Potassium Oxalate—
Rotterdam, 6 cks.
Potassium Prussiate—
Amsterdam, 8 cks.
Pumice Stone—
Teneriffe, 10 crts. Teneriffe
Coaling Co
Pyrites—
Leghorn, 202 t.

Huelva, 5,089 Matheson
& Co.
Rosin—
Savannah, 2,312 brls.
New York, 850
Saltpetre—
Hamburg, 40 kgs.
Soap—
Boston, 5 cs.
Bari, 249
Boston, 20 Diamond Match Co.
Naples, 278
Soapstone—
Bordeaux, 100 bgs. Geo. G. Black-
well, Sons & Co.
Starch—
Antwerp, 233 cs. J. T. Fletcher
& Co.
Bremen, 170 12 pks.
Antwerp, 580
Odessa, 110 bgs.
Hamburg, 288
Stearine—
Rouen, 13 bgs. Co-op. W'sale
Society Ltd
Antwerp, 1 ck.
Sulphur—
Catania, 50 bgs.
Tallow—
New York, 130 tcs. Colby & Co.
Boston, 7 brls.
Zarate, 347 pps. J. Nelson
& Sons, Ltd
B. Ayres, 549 cks.
New York, 92 tcs. 100 hds.
Campana, 667 cks.
Tartaric Acid—
Trieste, 4 brls.
Treacle—
Boston, 500 brls.
Tungstate Soda—
Bremen, 2 cks.
Ultramarine—
Rotterdam, 16 cks.
Yarnish—
New York, 3 brls. W. A. Warren
Antwerp, 1 J. T. Fletcher
White Lead—
Antwerp, 16 brls.
Rotterdam, 18 cks.
Wood Pulp—
Rotterdam, 199 brls. 80 pks.
Boston, 145
Zinc Ashes—
Boston, 41 brls.
Zinc Oxide—
Antwerp, 96 brls. 1 ck.
Zinc White—
Rotterdam, 83 cks.

MANCHESTER.

Week ending September 18th.

Acetic Acid—
Rotterdam, 17 blns.
Alizarine—
Rotterdam, 40 cks.
Alumina Sulphate—
Rotterdam, 14 cks.
Aniline Salts—
Rotterdam, 6 cks.
Barytes—
Antwerp, 100 bgs.
Rotterdam, 100
Chemicals (otherwise undes.)—
Rouen, 22 cks.
Rotterdam, 4
Colours—
Hamburg, 18 cks. 2 cs.
Antwerp, 8
Rotterdam, 54 39
Boulogne, 6 4
Cream of Tartar—
Rotterdam, 8 cks.
Farina—
Hamburg, 128 bgs.
Stettin, 960 Browne, Geveke,
& Co.
Rotterdam, 603
" 3,700
Glucose—
Stettin, { 1,000 bgs.
35 cks.
Glue—
Rouen, 19 cks. 23 bls.
Antwerp, 10

Hamburg, 3
Rotterdam, 110 bgs.
Lead Acetate—
Hamburg, 29 cks.
Stettin, 59
Limestone—
Antwerp, 2 crts. J. T. Fletcher
& Co.
" 1
Litharge—
Rotterdam, 31 cks.
Manganese Ore—
Visagapatam, 1,470 t. Rogers & Bright
Methylene—
Antwerp, 2 cks.
Naphtha—
Rotterdam, 6 cks.
Sarpsborg, 2 Kellner Partington
P. & P. Co.
Oxalic Acid—
Rouen, 17 cks.
Paraffin Scale—
New York, 691 brls.
Phosphates—
Rotterdam, 12 cks.
Phosphorus—
New York, 50 cs.
Pitch—
Rotterdam, 13 cks.
Potash—
Rouen, 4 cks.
Potassium Chloride—
Hamburg, 31 cks. 40 dms.
Saltpetre—
Hamburg, 3 cks.
Soap—
Boulogne, 2 cks.
Sodium Nitrate—
Rotterdam, 4 cks.
Starch—
New York, 2,650 bgs.
Antwerp, 155 cs.
Hamburg, 50 cks. 168
Rotterdam, 185
Stearine—
Rotterdam, 20 bls.
Sulphuric Acid—
Rotterdam, 2 cks.
Tallow—
New York, 5 hds.
Tannic Acid—
Hamburg, 4 cs.
Tartaric Acid—
Rotterdam, 11 cks. 20 kgs.
Waste Salt—
Hamburg, 1,500 bgs. and qty.
Whiting—
Gothenburg, 100 bgs. 1 cs.
Wood Pulp
New York, 480 rolls
Gothenburg, 1,280
Christiania, 400 bls.
Skien, 4,023
Drammen, 480
Rotterdam, 240 bds.
Zinc Ashes—
Stettin, 35 cks.
Zinc Oxide—
Hamburg, 25 cks.
Rotterdam, 90 brls.
New York, 100
Zinc White—
Rotterdam, 5 cks.

HULL.

Week ending September 18th.

Acids—
Hamburg, 28 cks. Wilson,
Sons, & Co., Ltd.
Molfetta, 76
Antimony—
Hamburg, 10 cs. Wilson,
Sons, & Co., Ltd.
Barytes—
Amsterdam, 22 cks. W. & C. L.
Ringrose
Bremen, 35
Riga, 65 Wilson,
Sons, & Co., Ltd.
Benzol—
Hamburg, 10 cs. Wilson,
Sons, & Co., Ltd.
Camphor—
Hamburg, 1 ck.
Castor Oil—
Trieste, 10 cs. Wilson,
Sons, & Co., Ltd.

THE CHEMICAL TRADE JOURNAL.

220

Chemicals (otherwise undescribed)

Stettin, 5 cks. Wilson, Sons, & Co., Ld.
 Dunkirk, 18 287 pks. " "
 Antwerp, 150 bgs. " "
 Bremen, 4 kgs. Veltmann & Co.

Cod Oil—

Christiania, 20 brls. Wilson, Sons, & Co., Ld.
 Aalesund, 131

Colours—

New York, 50 brls. Wilson, Sons, & Co., Ld.
 Stettin, 20 cks. W. & C. L. Ringrose
 Rotterdam, 2 bxs. 27 brls. Bailey & Leatham, Ld.
 Hamburg, 1 cs. Wilson, Sons, & Co., Ld.
 Dunkirk, 3 6 cks. Wilson, Sons, & Co., Ld.
 Antwerp, 10 brls. Wilson, Sons, & Co., Ld.

Cryolite—

Copenhagen, 25 cks. Wilson, Sons, & Co., Ld.

Dyestuffs—

Alizarine, 19 brls. W. & C. L. Ringrose
 Rotterdam, 10 cks.

Argols

Bordeaux, 61 cks. Wilson, Sons, & Co., Ld.

Extracts

Trieste, 4 brls. Wilson, Sons, & Co., Ld.

Shumac

Paleimo, 100 brls. Wilson, Sons, & Co., Ld.

"

2,375

Farina—

Stettin, 100 bgs. Wilson, Sons, & Co., Ld.

Glucose—

New York, 50 brls. Hutchinson & Son
 Rotterdam, 50 bgs. Wilson, Sons, & Co., Ld.

Glue—

New York, 40 pks. Wilson, Sons, & Co., Ld.

Bergen,

Antwerp, 2 brls. Bailey & Leatham, Ld.

Stettin,

17 10 brls. Wilson, Sons, & Co., Ld.

Dunkirk,

83 10 brls. " "

Hydrofluoric Acid—

Hamburg, 1 cs. Bailey & Leatham, Ld.

Linseed Oil—

Amsterdam, 150 brls. Hutchinson & Son

Lithopone—

Stettin, 4 cks. Wilson, Sons, & Co., Ld.

Minium—

Rotterdam, 7 cks. Hutchinson & Son

Ochre—

Rouen, 181 cks. Rawson & Robinson

Paint—

Trieste, 28 pks. Wilson, Sons, & Co., Ld.

Phosphate—

Ghent, 80 t. Wilson, Sons, & Co., Ld.

Bongie,

1,300

Phosphorus—

New York, 12 cs.

Potash—

Dunkirk, 20 dms. Wilson, Sons, & Co., Ld.

Pumice Stone—

Trieste, 18 pks. Wilson, Sons, & Co., Ld.

Messina,

15 60 brls. " "

Pyrites—

Drontheim, 20 t. Wilson, Sons, & Co., Ld.

Quicksilver—

Hamburg, 3 brls. Wilson, Sons, & Co., Ld.

Saltpetre—

Hamburg, 39 cks. Wilson, Sons, & Co., Ld.

"

" 29 brls. " "

Soda—

Antwerp, 120 bgs. Bailey & Leatham, Ld.

Starch—

Amsterdam, 60 cs. W. & C. L. Ringrose

Ghent, 191 Sons, & Co., Ld.

Bremen, 2,930 Veltmann & Co.

Antwerp, 160 Wilson, Sons, & Co., Ld.

Stearine—

Antwerp, 5 bgs. Wilson, Sons, & Co., Ld.

Tallow—

New York, 130 tcs. Wilson, Sons, & Co., Ld.

Dunkirk,

153 cks. " "

Tar—

Stockholm, 807 brls. Wilson, Sons, & Co., Ld.

Uleaborg,

3,375 350 hf-brls.

Tartar—

Bordeaux, 5 cks. Rawson & Robinson

Tartaric Acid—

Rotterdam, 3 cks. Hutchinson & Son

Treacle—

New York, 950 brls. Wilson, Sons, & Co., Ld.

Boston,

863 100

Turpentine—

Libau, 105 brls.

Ultramarine—

Rotterdam, 8 cks. Hutchinson & Son

Waste Salt—

Hamburg, 508 bgs.

White Lead—

Rotterdam, 20 cks. Hutchinson & Son

Wood Pulp—

Ghent, 1 ble. Wilson, Sons, & Co., Ld.

Christiania,

892 502

Gothenburg,

800 97 J. Good & Sons

Helsingfors,

97 J. Good & Sons

Zinc Oxide—

Antwerp, 5 cks. Morley & Co.

GLASGOW.

Week ending September 23rd.

Acetate of Lime—

New York, 642 bgs.

Acetic Acid—

Rotterdam, 15 crbys. J. Rankine & Son

Alum—

Rotterdam, 31 cks. J. Rankine & Son

Antimony Salt—

Rotterdam, 10 cks. J. Rankine & Son

Asbestos—

Montreal, 300 bgs.

Barium Sulphate—

Antwerp, 400 bgs.

Barytes—

Rotterdam, 109 cks. J. Rankine & Son

Hamburg,

370 bgs.

Cod Oil—

St. John's, 100 cks.

Colours—

Hamburg, 1 cs. J. Rankine & Son

Antwerp, 1 cs. 1 cs. J. Rankine & Son

Rotterdam, 46 pks. 5 bxs. J. Rankine & Son

Cottonseed Oil—

New York, 275 brls.

Dyestuffs—

Alizarine, 12 cks. J. Rankine & Son

1 bx. 99 brls. & Son

Aniline, 1 cs. J. Rankine & Son

Rotterdam, 1 bx. 3 brls. " "

Aniline Colours, 14 cks. 3 cs.

Indigo

Rotterdam, 2 cts. J. Rankine & Son

Farina—

Hamburg, 99 bgs.

Glucose—

New York, 1,099 brls.

Glue—

New York, 98 brls. J. Rankine & Son

Hamburg, 8 cks. 20 bgs.

Lead Acetate—

Hamburg, 27 cks.

Litharge—

Rotterdam, 30 cks. J. Rankine & Son

Ochre—

Rouen, 51 cks.

Paint—

Philadelphia, 2 brls. J. Rankine & Son

New York, 4 cs.

Paraffin Wax—

New York, 100 brls.

Potash—

Hamburg, 200 bgs. 40 dms.

Potassium Oxalate—

Rotterdam, 5 cks. J. Rankine & Son

Rosin—

New York, 2,805 brls.

Saltpetre—

Hamburg, 42 cks.

Soap—

Rotterdam, 3 cs. J. Rankine & Son

New York, 25 bxs.

Sodium Acetate—

Rouen, 34 bgs. J. Rankine & Son

Antwerp, 1 ck.

Sodium Sulphate—

Antwerp, 15 cks.

Starch—

Antwerp, 65 cs. J. Rankine & Son

New York, 2,000 bgs.

Tallow—

New York, 50 tcs.

Tartaric Acid—

Antwerp, 4 cks.

Treacle—

Philadelphia, 1,100 brls. J. Rankine & Son

Charente, 8 cks.

Ultramarine—

Rotterdam, 4 cs. J. Rankine & Son

Varnish—

New York, 44 brls.

White Lead—

Rotterdam, 66 cks. J. Rankine & Son

Wood Pulp—

Gothenburg, 70 brls.

New York, 59 rolls

Christiania, 744 brls. 19 cs.

Zinc Oxide—

New York, 50 brls.

Zinc White—

Rotterdam, 25 cks. J. Rankine & Son

TYNE.

Week ending September 18th.

Alum Earth—

Hamburg, 29 cks. Tyne S. S. Co.

Barium Chlorate—

Rotterdam, 350 bgs. Tyne S. S. Co.

Barytes—

Rotterdam, 268 bgs. Tyne S. S. Co.

Chemicals (otherwise unascrbed)

Hamburg, 315 t. Clephans & Wiencke

Colours—

Antwerp, 2 brls. Tyne S. S. Co.

Hamburg, 10 cs. " "

Ghent, 4 brls. " "

Cryolite—

Copenhagen, 2 cks.

Glucose—

New York, 50 brls. Furness, Withy, & Co.

Glue—

Hamburg, 6 cks. Tyne S. S. Co.

Kieselguhr—

Bergen, 290 bgs. P. H. Matthies-sen & Co.

Limestone—

Antwerp, 2 crts. Tyne S. S. Co.

Phosphate—

Beaufort, 2,754 t. Langdale's Chemical M. Co.

Pitch—

Rotterdam, 4 cks. Tyne S. S. Co.

Plumbago—

Hamburg, 4 cks. Tyne S. S. Co.

Soap—

New York, 2 cs. Furness, Withy, & Co.

Sodium Nitrate—

Rotterdam, 5

Antwerp,

18 bgs. Tyne S. S. Co.

Stearine—

Rotterdam, 7 bgs. Tyne S. S. Co.

Antwerp,

2 brls. " "

White Lead—

Rotterdam, 5 cks. Tyne S. S. Co.

Wood Pulp—

New York, 862 rolls. Furness, Withy, & Co.

Gothenburg, 130 pks.

Christiania, 1,202 brls.

Zinc Oxide—

Antwerp, 10 brls. Tyne S. S. Co.

GOOLE.

Week ending September 15th.

Acetic Acid—

Rotterdam, 4 cks.

Alizarine—

Rotterdam, 87 cks.

Antimony—

Boulogne, 6 cks.

Caoutchouc—

Boulogne, 6 cks.

Colours—

Hamburg, 11 cks. 3 cs.

Dyestuffs (otherwise unascrbed)

Boulogne, 50 cks. 2 cs. 26 pks.

Rotterdam, 523 88

Farina—

Hamburg, 250 bgs.

Delfsryhl, 1,845

Glue—

Hamburg, 1 ck.

Logwood—

Belize, 521 t.

Ochre—

EXPORTS OF CHEMICAL PRODUCTS

OF

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.			
Ending September 22nd.			
Janciro, 6 pks.	£16		
ta, 15	14		
ri, 20 dms.	42		
York, 9 t. 7 c.	£100		
Waste—			
ia, 40 t. 10 c.	£98		
ia—			
ie, 2 t. 4 c.	£56		
ia (Liquid)—			
ie, 4 c.	£17		
ium Chloride—			
ab, 2 t.	£60		
1	19		
ium Sulphate—			
rneau, 180 t.	£1,260		
sp, 50	400		
urg, 260	2,000		
ara, 60	475		
ad, 22	170		
o, 190	1,160		
ium—			
urg, 12 brls.	£20		
2 t. 6 c.	25		
n Nitrate—			
York, 2 t. 10 c.	£45		
White of Lime—			
ia, 5 t. 4 c.	£77		
—			
dam, 10 cks.	£27		
ic Acid—			
rdam, 49 cks.	£240		
dam, 24	112		
1 cs.	6		
ic Acid Gas—			
dam, 4 flisks.	£20		
ic Soda—			
ntle, 1 t.	£22		
anton, 5 c.	11		
Y, 1	6		
ri, 2	7		
Elizabeth, 3	18		
adon, 5	6		
eston, 8	15		
3	71		
als (otherwise undescribed)			
ne, 12 pks.	£41		
gton, 10 cs.	21		
ai, 9	69		
de, 33	53		
rk, 4 t. 19 c.	11		
Bay, 1 cs.	11		
ork, 4	16		
ai, 100 kids.	80		
urne, 1 ck. 6	33 pks. 137		
lles, 5 t. 6 cks.	86		
dam, 20 kgs.	15 dms. 194		
ersburg, 15	85		
dam, 11 cks.	31		
arg, 20	57 kgs. 431		
es, 50 cs.	190		
dorf, 16	100		
o, 1	12		
ai, 2 kgs. 4	49		
ar, 1	12		
4	106		
ml, 7	38		
ne, 1	10		
Acid—			
ania, 5 c.	£33		
ona, 1 t.	123		
3	24		
3	22		
Y, 1	7		
ia, 2	13		
1	8		
ie, 5	32		
Elizabeth, 4	16		
outh, 1	7		
own, 3	18		
1	32		
Products—			
arine			
on, 2 cks.	£30		
1 cs.	7		
ux, 5	90		
Aniline Oil			
Genoa, 6 dms.	£210		
Rotterdam, 10	330		
Aniline Salts			
Genoa, 11 cks.	£90		
Anthracene			
Dusseldorf, 230 cks.	£938		
Cologne, 563	2,164		
Benzol			
Rotterdam, 48 cks. 80 puns.	£989		
Cologne, 23 dms. 6	575		
Creosote			
San Francisco, 180 brls. 200 dms.	£193		
New York, 1,525 cks.	866		
Creosote Oil			
N. Orleans, 397 cks.	£223		
Dyes			
New York, 154 cs.	£380		
Naphtha			
Barbadoes, 1 ck.	£6		
Treport, 25	62		
Naphthaline			
Bremen, 70 cks.	£155		
Hamburg, 6	52		
Cologne, 6	52		
Pitch			
New York, 670 cks. 2,178 bgs.	£433		
St. Vincent, 5 brls.	43		
Calcutta, 25	15		
Alexandria, 260	70		
Rotterdam, 121	273		
Helsingfors, 50 t.	56		
Montreal, 360 cks.	93		
Cape Town, 21	10		
Pitch and Tar			
Pt. Elizabeth, 18 cks.	£15		
Prussian Blue			
Dusseldorf, 13 cks.	£124		
Pyridine			
Malmö, 6 cks.	£80		
Tar			
Algea Bay, 260 dms.	£8		
Helsingfors, 550 cks.	288		
Rotterdam, 100	125		
Pt. Elizabeth, 200	7		
Coal Products (otherwise undescribed)			
Montreal, 1 cs.	£8		
Copper Sulphate—			
Odessa, 5 t. 3 c.	£84		
Brisbane, 11	5		
Colombo, 2	33		
Cream of Tartar—			
Sydney, 1 t.	£78		
New Plymouth, 2 c.	10		
Normanton, 15	64		
Cooktown, 3	12		
Newcastle, 3	12		
Pt. Elizabeth, 2	10		
Disinfectants—			
Antwerp, 10 cks.	£50		
Paris, 16	50		
Sydney, 16 cs.	37		
Barbadoes, 5 pks.	20		
Hamburg, 60 cks.	200		
Durban, 7	26		
Demerara, 5	11		
Manure—			
Hamburg, 19 t. 10 c.	49		
Santa Cruz, 8	30		
Bluff, 60	159		
Jersey, 67	2		
Trinidad, 10	90		
Cape Town, 200	17		
Antwerp, 30	1,238		
Fremantle, 6	9		
Rouen, 111	320		
Nitric Acid—			
Madras, 10 cs.	£14		
Phosphorus—			
Oporto, 3 cs.	£42		
Lisbon, 3	42		
Potash—			
Melbourne, 7 c.	£28		
E. London, 11	12		
Potassium Bichromate—			
Calcutta, 10 c.	£21		
Potassium Cyanide—			
Rio de Janeiro, 1 t. 10 c.	£225		
E. London, 7	620		
Pt. Elizabeth, 4	392		
Melbourne, 8	30		
New York, 40 cs.	191		
Potassium Prussiate—			
Yokohama, 10 c.	£24		
New York, 20 cks.	33		
Potassium Sulphate—			
Mauritius, 24 t. 16 c.	£266		
Salt Cake—			
Antwerp, 140 t.	£240		
Saltpetre—			
Colombo, 18 c.	£18		
Montreal, 5 t.	92		
Oporto, 9	172		
Salts of Soda and Lime—			
New York, 15 c.	£157		
Sheep Dip—			
Melbourne, 250 dms.	£156		
Cape Town, 200	19 c.		
Hobart, 20	14		
Natal, 250	47		
Otago, 500 cs.	875		
Odessa, 200	350		
B. Ayres, { 2,109 265 dms.	5,531		
Montreal, { 33 t. 3 c.	15		
E. London, { 13 19	375		
Durban, { 1000 dms.	163		
Soda—			
Rotterdam, 5 t.	£30		
Soda Ash—			
Wellington, 7 t. 16 c.	£39		
Soda Crystals—			
Cape Town, 4 t. 16 c.	£23		
Sodium Bicarbonate—			
Sydney, 20 cs.	£24		
New Plymouth, 1 t.	7		
Pt. Elizabeth, 1	7		
Sodium Bisulphite—			
Lyttelton, 16 c.	£34		
Sodium Nitrate—			
Melbourne, 3 t. 12 c.	£29		
Sodium Sulphate—			
Wellington, 8 t. 2 c.	£19		
Sulphur—			
Adelaide, 1 t. 1 c.	£6		
Nelson, 2	13		
Sulphuric Acid—			
Madras, 10 cs.	£8		
Cape Town, 30	20		
Demerara, 10 t. 7 c.	30 crbys 60		
Durban, 110 cs.	116		
Superphosphates—			
Auckland, 75 t.	£300		
Tartaric Acid—			
Brisbane, 3 c.	£13		
Sydney, 10	59		
Boulogne, 5	31		
Adelaide, 5	33		
New Plymouth, 4	30		
Nelson, 3	20		
Canterbury, 5	30		
Newcastle, 3	18		
Bombay, 6 cs. 2	100		
Pt. Elizabeth, 2	14		
LIVERPOOL.			
Week ending September 22nd.			
Acetic Acid—			
Lisbon, 15 c. 2 q.	£20		
Alum—			
Melbourne, 1 t.	£5		
Sydney, 1	5		
Quebec, 3 17 c. 1 q.	19		
Alexandria, 3 14	3		
Piræus, 6 3	3		
Galatz, 8 3	11		
Callao, 2 13	2		
Rio de Janeiro, 12	5		
Ammonium Carbonate—			
Bourgas, 7 c.	£10		
Vera Cruz, 9	3 q.		
Salonica, 3	5		
Copenhagen, 10	14		
Corunna, 10	2		
Maranham, 1	3		
Ammonium Chloride—			
Kustendje, 11 c.	£10		
Philadelphia, 8 t. 6	2 q.		
Galatz, 12	19		
Bourgas, 13	11		
Leghorn, 19	18		
Trieste, 1	29		
Patras, 3	4		
Genoa, 5	94		
Ammonium Sulphate—			
Nantes, 35 t. 11 c. 3 q.	£281		
Montreal, 30	5		
Venice, 30	11		
Newport News, 50	388		
N. Orleans, 25	192		
New York, 75	10		
Honolulu, 132	1,050		
Lisbon, 10	73		
Valencia, 121	19		
Philadelphia, 61	3		
Arsenic—			
Maranham, 1 t. 14 c. 3 q.	£40		
Bleaching Powder—			
Bahia, 10 cs.			
Baltimore, 77 cks.			
Bordeaux, 23			
Boston, 793			
E. London, 4 bxs.			
Montreal, 45	5 brls.		
Naples, 16			
Newport News, 309			
New York, 320			
Philadelphia, 316			
Rio de Janeiro, 11			
Rotterdam, 18			
St. John's, N.B. 17			
San Francisco, 50			
Vera Cruz, 136			
Natal, 2 t. 15 c.	£27		
Boracic Acid—			
Rotterdam, 11 c.	£13		
Borax—			
Barcelona, 1 t. 1 c.	£18		
Antwerp, 7	7		
Rotterdam, 6	5		
Hamburg, 5	5		
Montreal, 13	13		
Ghent, 1	17		
Maranham, 2	1		
M. Video, 10	10		
Amsterdam, 3	15		
Yokohama, 5	4		
Adelaide, 2	34		
Ancona, 10	13		
Genoa, 3	45		
Calcium Chloride—			
Boston, 2 t.	£3		
Sydney, 10	5 c.		
Melbourne, 10	1		
Carbolic Acid—			
Leghorn, 10 c.	£34		
Genoa, 2	2 q.		
New York, 2	38		
Hamburg, 13	3		
Montreal, 1	63		
St. Louis, 14	4		
Bathurst, 2	1		
Caustic Potash—			
San Francisco, 2 t.	£52		
Punta Arenas, 10 c.	13		
Caustic Soda—			
Adelaide, 22 brls.			
Alexandria, 20 dms.			
Amsterdam, 30			
Antwerp, 17			
Bahia, 325			
Baltimore, 150			
Barcelona, 312	50 cks.		
Bari, 31			
Bilbao, 15			
Bombay, 20			
Bordeaux, 45	54 brls.		
Boston, 50			
Bourgas, 31			
Cadiz, 5			
Callao, 100			
Christiania, 5			
Dunkirk, 35			
Fairwater, 35			
Fiume, 79			
Genoa, 118			
Gothenburg, 5			
Hamburg, 30			
Hamilton, 20 cs.			
Hlugo, 100			
Kobe, 5			
La Libertad, 80			
Leghorn, 52			
Libau, 168			
Lisbon, 105			
Malaga, 115			

rt,	375	3	2	842
st,	81	19	3	172
x,	130	2		401
	100			190
	85			153
	120	1		275

ts—				
g,	22 t.	9 c.		£650
c Acid—		2 c.		£15

p,	5 cks.			
s,	3 cs.			
	5			

Lead—				
	3 t.	12 c.		
own,	20 kgs.			
ide—				
	7 c.	3 q.		£7

NCHESTER.

ending September 22nd.

Colours—				
rg,	1 cs.	10 pks.		
am,	5 kgs.			

Oil—				
p,	5 dms.			
rg,	3			

Salts—				
p,	10 cks.			
c Acid—				
	4 cks.			

als (otherwise undescribed)				
lam,	6 cks.			

blood—				
	500 bgs.			

Oil—				
	5 brls.			

ia—				
t,	50 cks.			
n Wax—				
rg,	12 cs.			

p,	3,062 c.			
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rg,	1 ck.			
Bicarbonate—				
t,	34 kgs.			
agen,	30 cks.			

rg,	65 cks.			

HULL.

ending September 18th.

ium Sulphate—				
t,	333 bgs.			
rk,	461			

e Colours—				
ork,	8 cks.			

os—				
rdam,	1 brl.			

ing Powder—				
	21 cks.			

ic Acid—				
olm,	22 pks.			

als (otherwise undescribed)				
rp,	2 cs.			

hagen,	20 kgs.			
ania,	3 cks.			
nburg,	18			

urg,	230			
gfors,	5 kgs.			
sberg,	2 cks.			

Norrkoping,	6 cks.			
Palermo,	1			
Rotterdam,	12			
Riga,				
Stettin,	1			
Stockholm,	134 bgs.			
Wasa,	2 cks. 11			
Wyburg,	6			
	15			

Coal Products (otherwise undes.)—				
Amsterdam,	169 cks.			
Danzig,	25			

Colours—				
Rotterdam,	1 bx.			

Cottonseed Oil—				
Amsterdam,	435 c.			
Antwerp,	104			
Bremen,	100			
Copenhagen,	304			
Dunkirk,	1,099			
Hamburg,	948			
Konigsberg,	102			
Rouen,	200			
Rotterdam,	102			
Stettin,				
Trieste,	902			

Creosote—				
Copenhagen,	10 brls.			

Glue—				
Hamburg,	1 cs.			
New York,	29 cks.			

Linseed Oil—				
Amsterdam,	153 c.			
Bremen,	3			
Bergen,	87			
Copenhagen,	44			
Drontheim,	76			
Gothenburg,	6			
Ghent,	3			
Hamburg,	261			
Rotterdam,	100			
Trieste,	127			

Manure—				
Danzig,	1,206 bgs.			
Rouen,	261			
Stettin,	2,178			

Mineral White—				
Bergen,	20 bgs.			

Paint—				
Bergen,	1 ck.			
Drontheim,	2 cs.			
Stockholm,	4 bxs.			

Painters' Colours—				
Amsterdam,	5 cks.			
Antwerp,	118			
Abo,	38 cs.			
Copenhagen,	8 dms.			
Christiania,	4			
Fiume,	1			
Gothenburg,	7			
Hamburg,	1			
Helsingfors,	10			
Konigsberg,	6			
Rotterdam,	1			
Reval,	8			
Stettin,	1			
Stockholm,	1			
Stavanger,	1			
Trieste,	11			

Paraffin Wax—				
Libau,	10 bgs.			

Pitch—				
Dunkirk,	250 t.			
Helsingfors,	71 cks.			

Soap—				
Bremen,	2 cs.			
Copenhagen,	3			
Christiania,	1			
Stockholm,	1			

Starch—				
Bergen,	10 cs.			
Copenhagen,	150			

Superphosphates—				
Copenhagen,	517 bgs.			

Tallow—				
Amsterdam,	99 cks.			
Gothenburg,	1			
Stockholm,	25			
Wasa,	125			

Tar—				
Amsterdam,	15 cks.			
Copenhagen,	24			
Dunkirk,	10 brls.			
Drontheim,	12			
Hamburg,	15			
Wasa,	5			
	120			

Treacle—				
Bergen,	25 cks.			
Christiansund,	20 tcs.			

Ultramarine—				
Antwerp,	4 cs.			

Varnish—				
Antwerp,	1 cs.			
Copenhagen,	5 cks.			
Gothenburg,	1			
Norrkoping,	2			
Stettin,	15			

GLASGOW.

Week ending September 23rd.

Ammonium Carbonate—				
Christiania,				
Ammonium Sulphate—				
Barcelona,	51 t.			
Rouen,	20			
Valencia,	307			
Hamburg,	50			
Italy,	50			
Palermo,	15			

Boracic Acid—				
Paris,	£50			

Borax—				
Rotterdam,	10 t.			
Natal,	3½ c.			

Coal Products—				
Benzol				
Hamburg,	10 t.			
Creosote Oil				
U.S.A.,				
Pitoh				
Gothenburg,				
Riga,	12 t.			
Italy,	1,050			
Sicily,	20			
Tar				
U.S.A.,	£49			
Riga,	385			

Coal Products (otherwise undes.)—				
Rotterdam,	£10			

Extracts—				
Barcelona,	£78			
Boston,	100			

Iodine—				
Rotterdam,	£310			

Linseed Oil—				
Calcutta,	16 c.			
Cape Town,	18			
Hamburg,	11			
Pernambuco,	17½			

Painters' Colours—				
Calcutta,	qty.			
St. John's, N'ld.,				
Hamburg,				
Algoa Bay,				

Paraffin Wax—				
Christiania,				
Rotterdam,	13¼ c.			
Skien,				
Italy,	45			

Plumbago—				
Rio de Janeiro,	2 t.			
Potassium Bichromate—				
Barcelona,	£500			
Rotterdam,	203			
Italy,	49			

Potassium Prussia'e—				
New York,	£190			

Soap—				
E. London,	2 t.			
Sodium Bichromate—				
Barcelona,	9 t.			
Rouen,	15			

Sodium Sulphate—				
Gothenburg,	11 t.			

Starch—				
Barcelona,	£45			

Treacle—				
Gothenburg,	49 t.			
Christiania,	24			

Zinc Ashes—				
Rotterdam,	£158			

TYNE.

Week ending September 18th.

Alkali—				
Rotterdam,	7 t.			
Riga,	220			
Bergen,	2			

A'm Waste—				
Aarhuus,	20 t.			

Ammonium Sulphate—				
Barcelona,	100 t.			

Antimony—				
Hamburg,	6 t.			
Rotterdam,	3			
Barcelona,	1			

Barium Carbonate—				
Riga,	10 t.			
Hamburg,	50			

Bleaching Powder—				
Antwerp,	26 t.			
Hamburg,	26			
Rotterdam,	10			

Caustic Soda—				
Antwerp,	29 t.			
Hamburg,	29			
Copenhagen,	4			
Riga,	61			

Gelatine—				
Bergen,	1 c.			

Linseed Oil—				
Ergasteria,	1 t.			
Litharge—				
Riga,	10 t.			

Magnesia—				
Hamburg,	10 c.			
Rotterdam,	10			
Barcelona,	18 t.			

PRICES CURRENT.

WEDNESDAY, SEPT. 29TH, 1897.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.B. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary

Acids:—

	£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/6	& 8/6
" Glacial	"	40/-	
Arsenic S.G., 2000°	"	1	4 0
Fluoric	per lb.	0	0 3 1/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0 10
" (Cylinder), 30° Tw.	"	0	3 0
Nitric 80° Tw.	per lb.	0	0 1 1/2
Nitrous	"	0	0 1 1/4
Oxalic	nett	0	0 3 1/2
Phosphoric, 1750°	"	0	0 11 1/2
Picric	"	0	0 11
Sulphuric (fuming 50 %	per ton	15	10 0
" (monohydrate)	"	5	10 0
" (Pyrites, 168°)	"	3	0 0
" " 150°	"	1	5 0
" (free from arsenic, 145°)	"	1	7 6
Sulphurous (solution) S.G. 1025	"	3	0 0
Tannic (pure)	per lb.	0	1 2 1/2
Tartaric	"	0	1 1 1/2
Arsenic, white powdered	nett	per ton	22 0 0
Alum (loose lump)	"	4	10 0
Alumina Sulphate (pure)	"	4	2 6
Aluminoferrous	"	2	3 6
Aluminium (Ingot metal 98.99 3/4 %	nett	148	0 0
Ammonia, Anhydrous	per lb.	0	1 3
" 880 = 28° B.	"	0	0 2 1/4
" = 24° B.	"	0	0 1 1/4
" Carbonate	nett	0	0 3
" Muriate	per ton	18	0 0
" (sal-ammoniac) 1st & 2nd	per cwt.	33/-	& 31/-
" Nitrate	per ton	31	0 0
" Phosphate	per lb.	0	0 3 1/4
" Sulphate (grey) London	per ton	8	2 6
" (grey) Hull	"	8	3 9
Aniline Oil (pure)	per lb.	0	0 7 1/2
Aniline Salt	"	0	0 7 1/4
Antimony	per ton	29	10 0
" (tartar emetic)	per lb.	0	0 8
" (golden sulphide)	"	0	0 10
Barium Chloride	per ton	6	10 0
" Carbonate (native)	"	3	10 0
" Sulphate (native levigated)	"	42/6	to 65/-
Bleaching Powder, 35 %	nett	6	5 0
" Liquor, 7 %	"	3	10 0
Bisulphide of Carbon	"	12	0 0
Chromium Acetate (crystal)	per lb.	0	0 6
Calcium Chloride	per ton	2	5 0
China Clay (at Runcorn) in bulk	"	15/-	to 30/-

Coal Tar Products and Dyes:—

Alizarine (artificial) 20 %	nett	per lb.	0	0	6 3/4
Magenta	"	"	0	3	9
Anthracene, 30 % A, f.o.b. London	per unit	per cwt.	0	0	6
Benzol, 90's	"	per gallon	0	2	0
50/90	"	"	0	2	1
Carbolic Acid (crude 60°)	"	per gallon	0	1	10
" (crystallised 40°)	"	per lb.	0	0	7 1/2
" (liquid 95/97%)	"	per gallon	0	1	0
Creosote (ordinary)	"	"	0	0	2 1/2
" (filtered for Lucigen light)	"	"	0	0	3
Crude Naphtha 30 % @ 120° C.	"	"	0	0	11
Grease Oils, 22° Tw.	"	per ton	2	15	0
Pitch, f.o.b. Liverpool or Garston	"	"	1	0	0
Solvent Naphtha, 90 % at 160°	"	per gallon	0	1	7
Copper	"	per ton	49	3	6
" Sulphate	"	"	16	12	6
" Oxide (copper scales)	"	"	44	10	0
Glycerine (crude)	"	"	30	0	0
" (distilled S.G. 1250°)	"	"	60	0	0
Iodine	"	nett, per oz.	0	0	7 1/2
Iron Sulphate (copperas)	"	per ton	1	10	0
" Sulphide (antimony slag)	"	"	2	0	0
Lead (sheet)	"	"	15	0	0
" Litharge Flake (ex ship)	"	"	15	15	0
" Acetate (white ")	"	"	22	10	0
" " brown ")	"	"	15	15	0
" Carbonate: (white lead) pure	"	"	17	0	0
" Nitrate	"	"	19	0	0

Lime, Acetate (brown) (ex ship)	per ton	5	7	6
" " (grey) (ex ship)	"	8	6	0
Magnesium (ribbon and wire)	per oz.	0	2	3
" Chloride (ex ship)	per ton	2	10	0
" Carbonate	per cwt.	1	17	6
" Calcined Magnesia	per ton.	8	0	0
" Sulphate (Epsom Salts)	per ton	2	15	0
Manganese, Sulphate	"	16	0	0
" Borate	per cwt.	2	10	0
" Ore, 70 %	per ton	3	10	0
Methylated Spirit, 61° O.F.	per gallon	0	1	8
Naphtha (Wood), Solvent	"	0	2	9
" " Miscible, 60° O.F.	"	0	3	10
Oils:—				
Cotton-seed	per ton	16	15	0
Linseed	"	17	0	0
Stearine	per ton	22	0	0
Phosphorus (yellow)	per lb.	0	2	2
" (red)	"	0	2	8
Potassium (metal)	per oz.	0	3	7
" Bichromate	nett per lb.	0	0	4½
" Carbonate, 90% (ex ship)	per ton	16	10	0
" Chlorate	per lb.	0	0	4
" Cyanide, 98%	"	0	0	10½
" Hydrate (Caustic Potash) 90 %	per to	23	10	0
" " (Caustic Potash) 75/80 %	"	20	0	0
" " (Caustic Potash) 70/75 %	"	19	10	0
" Nitrate (refined)	per cwt.	1	1	6
" Permanganate	per cwt.	3	15	0
" Prussiate Yellow	per lb.	0	0	5¾
" Sulphate, 90 % (ex ship)	per ton	9	15	0
" Muriate, 80 % (do.)	"	8	10	0
Silver (metal)	per oz.	0	2	1
Sodium (metal)	per lb.	0	2	1½
" Carb. (refined Soda-ash) 48 %	nett per ton	4	15	0
" " (Caustic Soda-ash) 48 %	"	4	5	0
" " (Carb. Soda-ash) 48%	"	4	0	0
" " (Alkali) 58 %	"	3	17	0
" " (Soda Crystals)	"	2	5	0
" Acetate (ex-ship)	"	11	10	0
" Arseniate, 45 %	"	14	7	6
" Chlorate	per lb.	0	0	4¾
" Borate (Borax)	net, per ton.	14	15	0
" Bichromate	per lb.	0	0	3¾
" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	"	9	0	0
" " (74 % Caustic Soda) " "	"	8	10	0
" " (70 % Caustic Soda) " "	"	7	10	0
" " (60 % Caustic Soda) " "	"	6	10	0
" " (pure liquor 90° Tw.)	"	3	15	0
" " 77/78 % powdered (99 % hydrate)	"	12	10	0
" Bicarbonate	"	6	10	0
" Hyposulphite	"	5	0	0
" Manganate, 25%	"	15	0	0
" Nitrate (95 %) ex-ship Liverpool	per cwt.	0	7	4½
" Nitrite, 98 %	per ton	27	10	0
" Phosphate	"	10	10	0
" Silicate (glass)	per ton	4	10	0
" " (liquid, 100° Tw.)	"	3	7	6
" Stannate, 40 %	per cwt.	3	2	9
" Sulphate (Salt-cake)	per ton.	10	19	0
" " (Glauber's Salts)	"	1	7	6
" Sulphide	"	6	15	0
" Sulphite	"	5	0	0
Strontium Hydrate, 100%	"	10	15	0
Sulphocyanide Ammonium, 95 %	per lb.	0	0	5¾
" Barium, 95 %	"	0	0	4¾
" Potassium	"	0	0	6¾
Sulphur (Flowers)	per ton.	7	10	0
" (Roll Brimstone)	"	6	10	0
" Brimstone: Best Quality	"	4	10	0
Superphosphate of Lime (26%)	"	2	5	0
Tallow	"	19	0	0
Tin Crystals	per lb.	0	0	4¾
" English Ingots	per ton	65	10	0
Zinc (Spelter)	"	17	17	6
" Chloride (solution. 100° Tw.)	"	4	17	6
" Sulphate, Crystal	"	5	2	6

THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

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Contents.

PAGE	PAGE
Patent Law Reform	225
Petroleum Oil Fields at Gaspe	226
Reformed Reforms in American	226
Patent List	227
Acts of Latest Complete Speci-	227
tions	227
Exports of Petroleum from U.S.A.	227
Letters to Correspondents	227
Wy and Irwell Joint Committee	228
Manchester Sewage Works	229
Chilian Nitrate Industry	229
Rhymney Iron Company's	229
Imports	229
Whisky Ageing Process	230
Petroleum Inquiry	230
Reports of Companies	230
Oil and Natural Gas in British	231
Columbia	231
Trade Notes	232
Tar and Ammonia Products	232
Miscellaneous Chemical Market	232
The Metal Markets	232
Report on Manure Material	233
Liverpool Oil and Colour Market	233
Hull Paint, Oil, and Colour Report	233
West of Scotland Chemicals	233
Tyne Chemical Report	233
New Companies	234
Imports	234
Exports	236
Prices Current	240

Notices.

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Communications for the Editor, if intended for insertion in the next week's issue, should reach the office not later than **Tuesday morning**.

Articles, reports, and correspondence on all matters of interest to Chemical and allied industries, home and foreign, are solicited. Respondents should condense their matter as much as possible, on one side only of the paper, and in all cases give their names, addresses, not necessarily for publication. Sketches should be on separate sheets.

Advertisements.

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Advertisements intended for insertion in the current week's issue should reach the office by **Thursday morning** at the latest.

THE PATENT LAW REFORM.

THINGS done in a hurry are seldom done well, so that there is perhaps more cause for congratulation than lamentation because we are moving but slowly towards some of the changes that are wanted in our Patent Laws.

Nevertheless, we are moving, and in the right direction, although it would seem that there are those who will not refrain from doing what they can to impede progress.

A week or two back we published an article on the Patent Laws, in which the licence clause was fully criticised, and, in view of the anomalies we have previously dealt with in these columns, we venture to add justly criticised. The article in turn drew a reply from a leading patent agent, which virtually was a sweeping indictment of undiluted asininity against everyone, whether lords, professors, or simple M.P.'s, who at any time had differed from this worthy procurer of patents. After reading this reply to the article in question, it seems to us we must infer that but for this gentleman the Patent Laws would not have been what they are, and the much-abused clause 22 in particular would have been non-existent.

This gentleman evidently looks upon this clause as a masterpiece, and he is quite welcome to do so. His ingenious defence of its latter-day failings are also worthy of place; but it is also perfectly legitimate for different-minded people to dwell upon their personal experience of the iniquities and ineptitude of this clause as it is "engineered" to-day. What is more, we do not hesitate to say that, roundly speaking, this gentleman is expressing the opinions of a worthy but almost microscopic minority, represented by the unity of himself. There is certainly a widespread and strongly supported objection to this licence clause in its present form.

The one great fault of this clause is the difficulty of taking action with any hope of gaining a decision without almost unlimited litigation, and the practical importance of this fault is emphasised by the fact that foreigners can patent chemical and other processes in this country for which their own country will not grant a patent. So long as the compulsory obtainment of licences is as difficult as at present, these patents are a most powerful means of preventing any competition from this country. As a matter of fact, it is cheaper for foreign patentees to use up some of their vast reserve and patent funds in prolonged law suits than to grant licences.

One very obvious way of getting out of this difficulty would be to refuse to patent these processes in this second-hand way; but this would be making a great and radical change in our legal principles, and therefore the more modest request is made that when such semi-valid patents have been granted the grandmotherly protection of the English patent office, it shall be a simple and speedily accomplished matter to compel the patentees to grant licences for working their patents in this country. At present nothing is easier than to evade all such applications, as witness our articles in April last.

Doubting hearts may find confirmation of the existence of this evil in the action that is being taken by other countries to make representations at the International Convention for the Protection of Industrial Property to be held at Brussels in December.

Even America, whose patent laws are comparatively more favourable to native inventors than our own are, has felt the disadvantages of this liberal treatment of foreign patentees who wish to patent abroad all the invalid claims they cannot protect at home. The Commissioners of the United States Patent Office, who have this and other like matters in hand, have expressed their intention of making an effort at the forthcoming Convention to accomplish a change in this particular. As they express themselves, they wish to restrict the articles that are patentable in America so that the subject of another country cannot patent an article in the United States upon which he cannot secure a patent in his own country. This attitude has arisen from the injurious action of German patentees in this direction.

It is pleasing to see that pressure is to be put upon the Board of Trade, through our own Chambers of Commerce, to instruct the British delegates at the Conference to support the proposals of the United States.

NEW PETROLEUM OIL FIELDS AT GASPE.

AMONG the unexpected sources of wealth in the United States and Canada which have been discovered within the last thirty or forty years none have perhaps yielded more substantial results than the petroleum fields. The money that has been coined by means of the petroleum wells in the States has been amazing.

Gaspé, the field of the recent discoveries, is in the province of Quebec, and Gaspé Bay is one of the finest natural harbours in the world.

The existence of mineral oil in Gaspé appears to have been known to the aborigines long before the country was inhabited by white men. The Indians brought the crude oil to some of the earliest settlers, who, as a matter of curiosity, burnt it in their lamps. The first announcement of it is contained in a letter from Mr. McConnel, of Gaspé Basin, published in the Proceedings of the Literary and Historical Society of Quebec, in 1836. This letter described the petroleum under the name of Barbadoes tar, and states that it is common in Gaspé; a bottle of oil was sent to Quebec with the letter.

Sir William E. Logan, provincial geologist, visited the district in 1844, and in his report for that year elaborate descriptions are to be found of the oil springs of Douglastown and Silver Brook, although at that time, as is well known, the substance was not considered of economical importance. In a report published in 1846, Count de Rottermund suggested a possible future use for the petroleum of Gaspé, but from the then almost isolated position of the district, it is only now that these indications of untold wealth are beginning to attract the attention which they deserve.

In April, 1865, Mr. Charles Robb, the well-known mining engineer, who had gained considerable experience in oil in the productive districts of Pennsylvania and Enniskillen, was sent to Gaspé to make a thorough examination of the district, and to select and secure all the best locations for oil-bearing purposes. He spent three months there, and his explorations resulted in the purchase of 40,137 acres of land in fee simple, and 10,220 acres of mining rights in perpetuity, together 50,357 acres. These lands are situated (geologically) upon the three main "Anticlinals" of the Gaspé oil region; they include all the locations set forth in Sir Wm. E. Logan's official reports, and embrace the best portion of the largest tract upon which indications of petroleum have been found. Mr. Malcolm Sinclair (assistant to Mr. Charles Robb), who explored these lands for indications of oil, found sixty-eight distinct surface indications upon them.

Mr. Robb states:—"I have no hesitation in saying that the lands secured by me are the most valuable in the district for the purposes referred to (oil-boring purposes), having been selected either from actual discoveries and indications of oil found on them, or from certain geological and topographical features which experience has proved to be useful as a guide to the best selection. Independently of all theory, the fact of the existence of petroleum over a large tract of country in this district is abundantly proved, not only by the appearance of the limestone rock itself, which is everywhere found to be highly impreg-

nated with oil, but by the number of places widely apart from each other, at which the oil forces itself to the surface."

It will thus be seen, says the *Bullionist*, that the recent discoveries made by the Petroleum Oil Trust, Limited, an enterprising and influential body of English gentlemen who formed themselves into a company in 1892, for the purpose of acquiring and working the oil deposits at Gaspé, only bear out the opinions contained in the reports of the experts made over twenty years ago. As to the productive capacity of the company's territory it is of such dimensions that at the lowest estimate it is stated some 10,000 to 12,000 wells may be sunk.

In connection with the "deadly 73 degrees" question now causing such a commotion in the kennels of the Standard Oil Trust Company, the most important feature is the exceedingly high quality of the oils recently discovered. Professor Boverton Redwood, has made a report upon the property in conjunction with Mr. Stockpleth and Professor William Topley, fully confirming the statements made by the Geological Survey as to the future of Gaspé as an oil-bearing region.

PROPOSED REFORMS IN AMERICAN PATENT LAWS.

A COMMITTEE appointed by the National Association of Manufacturers to gather information on the subject of the United States patent laws, has decided to issue a circular letter desiring those who were interested in the subject to record their views in relation to the matters dealt with. The chief points are as follows:—

First.—Should the Government not charge an annuity on patents, trade marks, copyrights, &c., in order to invalidate such patents as are not considered by the owners of sufficient value to warrant the annuity, but which, nevertheless, stand a menace to new and useful patents for fear of infringement? A very large proportion of the patents in force are of little or no value to the owners, and are not being made use of, but nevertheless are often found to contain some element making it necessary to procure their control in order to avoid possible litigation or infringement by patents of later date, the merits of which make them desirable to work, both for the owner and the public. It is suggested that a small annuity would clear from the field such patents as the owner did not consider of sufficient value to warrant the outlay, and at the same time would furnish an income to the Government which might be used to advantage in the Patent Office.

Second.—The fact that foreigners are allowed to procure patents in America and hold them without further expense or trouble than the first cost, while United States citizens are obliged to pay annuities in many foreign countries, often amounting to many hundreds of dollars during the life of the patents, and also in many cases being obliged to work the same at intervals, entailing further great expense, is commented upon, and it is suggested that laws should be passed making annuities and working obligatory on all patents granted to foreigners the same as their respective Governments charge American citizens.

Third.—The advisability of having separate courts for adjudication of patents, trade marks, copyrights, etc., and if not, whether any changes should be made in the present procedure in order to shorten the time necessary to undertake litigation.

Fourth.—The desirability of any change in the Patent Office proceedings relative to procuring patents.

Fifth.—The practicability or desirability of having an international agreement whereby a patent allowed in one country may become operative in any other country party to the agreement, upon payment of proper fees, and also to fix upon a uniform charge and practice in relation to Government fees, annuities, working, etc.

Sixth.—What action, if any, can be suggested that this Government should take with countries that allow goods to be imported and sold within its borders that are marked or represented as having been manufactured in the United States, and sold under American names, trade marks, and brands, but which, in fact, were manufactured in some country other than the United States.

ACETYLENE FOR POWER PURPOSES.—Cuinat's tests at Compiegne regarding the production of power by means of acetylene have been entirely successful, says the *Revue Industrielle*. It has been established thereby that acetylene can be employed for operating ordinary gas engines, without necessitating any alterations except a reduction in the size of the valves. Acetylene develops three times as much energy as ordinary illuminating gas. The explosive mixture used consists of 10 parts of air and one part of acetylene. Cuinat estimates the consumption of 8 to 16 horse-power motors at no more than 160 liters of this mixture, and the cost per horse-power hour, according to the present price of calcium carbide, at about 6 cents. Cuinat extended his tests to all the effects resulting from the use of acetylene for power purposes, namely, the possible increase of shocks, manner of fastening the engine to the floor, etc. Heretofore it has been supposed that with acetylene no continuous operation of a motor could be obtained.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

- Producing Calcium Carbide. R. P. Pickett. 21,508. September 20.
 Manufacture of Dextrine. B. J. B. Mills. 21,531. September 20.
 Support for Chemical Filter Papers. W. M. Jones. 21,558. September 21.
 Improvements in Tanning. E. H. Dawson. 21,601. September 21.
 Apparatus for Manufacture of Calcium Carbide. H. Walker. 21,603. September 21.
 Electrolytes for Secondary Batteries. W. Decker and G. von Stoupe. 21,657. September 21.
 Black Pigments from Carbonaceous Substances. R. Strobentz and J. Fried. 21,713. September 22.
 Treating Gold Ore Slimes, etc. R. W. E. MacIvor. 21,736. September 22.
 Extracting Oil from Cocoa Nuts. J. C. W. Stanley and T. C. B. Hardman. 21,749. September 22.
 Steam Traps. W. Geipel. 21,783. September 23.
 Fire Extinguishers. G. Mordaunt. 21,827. September 23.
 Manufacture of Ink. H. H. Lake. 21,830. September 23.
 Improved Toilet Soap. F. S. D. Scott and T. Hawkins. 21,832. September 23.
 Improvements in Bleaching Compounds. The Aluminium Co., Ltd., and A. G. Haddock. 21,940. September 24.
 Electro-deposition of Metals. T. Greenfield. 21,976. September 25.
 Purifying Water and Sewage, etc. W. Watson. 21,982. September 25.

ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

These abstracts are specially prepared for the Chemical Trade Journal, and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.

Improvements in or Relating to the Treatment or Utilisation of Peat and its Products. W. W. Hughes, 31, Queen Victoria-street, and S. Wilson, The Lyd, Wembley. Eng. Pat. 20,084. September 10, 1896.

This apparatus effects the dry distillation of the peat prior to its conversion into calcium carbide in a separate electric furnace. It consists of a cylindrical retort fixed upright in a vertical flue into which the hot gases from a separate furnace pass. The cylinder is divided up into a series of funnel-shaped chambers, by sliding plates that pass diagonally through the sides of the flue and retort. By opening and shutting these charges of peat are allowed to descend from chamber to chamber until the retort is full. The products of distillation are carried off by pipes, connecting each chamber with the condensing apparatus, and are subsequently made use of. The carbonised peat as discharged from the bottom of the retort into an air-tight receptacle is mixed with lime, and after a previous heating introduced into an electric furnace. There are four figures illustrating the construction of the distilling retort, but the electric furnace is not dealt with.

Process and Apparatus for Extracting Oxygen from Air. A. F. de Villepigne, 9* Rue de la Victoire, Paris; V. Fournier, 66, Rue Caumartin, Paris; and G. Shenton, Copthall House, Copthall-avenue, London. Eng. Pat. 19,044. August 28, 1896.

The air is dialysed through a membrane of silk slightly treated with caoutchouc, when, as is well known, the oxygen passes through the membrane faster than the nitrogen. The apparatus for automatically and continuously performing this dialysis is composed of a wheel, mounted on a hollow axle, and on the periphery of which a series of leather bellows are fixed. The fixed side of the bellows is attached to the wheel, in the rim of which is a small recess. This recess or chamber is separated from the bellows by a silk membrane treated as above. When the bellows are compressed the air is forced through the membrane and into the small chamber, whence it passes by a tube to the next bellows, and so round the series till the last is reached. This bellows is connected by a hollow spoke with the hollow axle, and the air enriched in oxygen is thus removed for use. The first pair of bellows in the series is the only one connected with the air. On the top of the frame, carrying the bellows-fitted wheel, two rollers are placed, provided with suitable bearings. These rollers compress the bellows as they pass under them, the second one keeping the expressed bellows under pressure until the next one has been compressed, so entirely preventing any of the dialysed air passing backwards. The bellows are re-expanded springs, and have spring valves for releasing the nitrogen.

Improvements in or Connected with the Obtainment of Metals or Alloys by Electrolysis, or Hydro-Electro-Chemical Action. P. Marino, 77, Rue des Foulons, Brussels. Eng. Pat. 21,776. December 5, 1896.

It is claimed that in electrolytes prepared by double decomposition the migration of the ions is assisted. Better results can also be obtained by the addition of a salt of an alkaline earth or lead. By

treating different metallic salts in this way, and mixing the solutions obtained, an electrolyte from which an alloy is deposited is produced. It is often desirable to further add an alkaline salt, such as potash or soda, together with an organic acid or boracic acid. As an example, a solution of magnesium sulphate is mixed with rather less than an equivalent of barium chloride. Barium sulphate is precipitated, and the solution forms the electrolyte. The same can be done with aluminium chloride and lead acetate. As an alloy, the sulphates of aluminium and magnesium are treated with chloride of calcium, and the mixed chlorides with some undecomposed sulphates used as the electrolyte. The deposited metals are stated to be more cohesive, and to have a finer metallic lustre when prepared in this way.

Improvements in Extracting and Purifying Gutta-Percha. W. R. Amsay University College, Gower-street, London. Eng. Pat. 17,936. July 30, 1897.

The leaves and twigs of gutta-percha bearing plants are first treated with an alkaline solution, subsequent to the usual maceration in hot or cold water. The alkaline lye is removed by washing, and the twigs treated with rosin oil in a closed vessel at a temperature ranging from 80°C. to 120°C., and even 130°C. The gutta-percha is precipitated with acetone, and removed by filter-pressing. The solvent can be subsequently separated from the acetone by distillation. The danger and expense of highly volatile solvents such as toluol is thus avoided.

Improvements in the Manufacture of Soap. E. G. Scott, 67, Lord-street Liverpool. Eng. Pat. 26,285. November 20, 1896.

Instead of preparing soft soaps in the usual way, without separation of the water or glycerine, the oil, or oils, is first decomposed into fatty acids and glycerine, by the aid of lime, superheated steam, or other convenient means, and the glycerine separated. The fatty acids are then treated with potash in the usual manner.

EXPORTS OF PETROLEUM FROM U.S.A.

THE Chief of the Bureau of Statistics, Washington, gives the following returns of the exports of petroleum and petroleum products for August, 1897. The total shipments were 9,316,463 gallons, compared with 88,055,592 gallons in 1896. The total for the eight months ending Aug. 31st, 1897, was 646,126,105 gallons, against 600,939,751 gallons during the same period in 1896. The details of the shipments are as follow:—

	CRUDE PETROLEUM.	Gallons.
Total, Aug., 1897	.....	13,939,881
" " 1896	.....	12,395,601
	NAPHTHAS.	
Total, Aug., 1897	.....	897,329
" " 1896	.....	442,440
	ILLUMINATING.	
Total, Aug., 1897	.....	75,611,895
" " 1896	.....	70,728,601
	LUBRICATING AND PARAFFIN.	
Total, Aug., 1897	.....	4,863,830
" " 1896	.....	4,445,744
	RESIDUUM.	
Total, Aug., 1897	.....	3,528
" " 1896	.....	43,176

ANSWERS TO CORRESPONDENTS.

H.—We are obliged for your further information, which we have duly noted.

B.R.C.—We shall be able to let you have definite particulars in a day or two.

H.S.—They are not matters to be disposed of in a moment. In many cases the solutions are worth money.

C.F.R.—We cannot advise on matters that are of financial interest. We give you information, but any action you take must be based on your own opinion entirely.

B.S.—It is dependable as far as our experience goes, but an unreasoning allegiance is hardly advisable in things of this nature.

ANSWERS TO QUERIES.

Referring to the three queries which appeared on page 198 of our issue of September 21st, we may say:—

(I.) The best way of boiling corrosive liquids by steam must depend entirely upon the nature of the corrosive liquids. Generally speaking, lead, wood, and stone are the materials least acted upon by corrosive liquids, and lead is the most suitable material, generally speaking, for the evaporating steam coils. In certain cases copper steam coils may be used instead of lead with advantage, but it is impossible to reply definitely to this query without knowing the precise nature of the liquid to be evaporated.

(II.) Reference to our advertising columns will show that Messrs. Follows and Bate, The Archimedean Co., and Messrs. Werner, Pfeleiderer and Perkins, Ltd., are the most likely people to meet our correspondent's requirements.

(III.) From the same source it will be seen that disintegrating machinery and all particulars relating thereto can be obtained from the Central Cyclone Co., The Grinding Machinery Co., Mason Bros., Easton, Anderson and Gooldeen, The Globe Mill Co., and Mr. J. Harrison Carter.

MERSEY AND IRWELL JOINT COMMITTEE.

THE PERSECUTION ALLEGATIONS.

AT a meeting of this Committee held on Monday, Sir J. T. Hibbert presiding, Mr. Killick replied on behalf of the Consulting Sub-Committee to the speech delivered by Alderman Thompson, the vice-chairman of the committee, at the last meeting of the City Council. A letter was first read from Alderman Thompson, in which he regretted his inability to be present at the meeting owing to the visit of the City Council to Davyhulme.

Mr. Killick, called the attention of the committee to the following paragraph in the report of the Consulting Sub-Committee:—"Your sub-committee have also to report that they have considered the speech made by the vice-chairman of the Joint Committee (Mr. Alderman Thompson) at a meeting of the City Council, on the 15th September last, and they have requested the chairman of this committee (Mr. T. W. Killick) to reply to the same at to-day's meeting of the Joint Committee."

The Chairman said that before Mr. Killick proceeded to make his reply he would appeal to him not to deal, in anything he might say, with the question of the scheme which Manchester had just brought forward, and to deal with the question as little personally as he could.

Mr. Killick proceeding, said that in support of the motion moved at the last meeting of the City Council, Alderman Thompson made a speech which the Consulting Sub-Committee had had under its consideration. Mr. Thompson's position as an alderman of Manchester and as vice-chairman of the Mersey and Irwell Joint Committee gave great weight to his statements, and with some of them the sub-committee were unable to agree. Mr. Thompson said, "The sewage of the city was not satisfactory, and it had to be dealt with in some form or other." With that the sub-committee did agree. Alderman Thompson went on to say, "The Corporation could not satisfy that authority (the Joint Committee) by any means in their power." Further: "He thought the Council would say that the Rivers Committee had done everything they could with their present knowledge to satisfy the Joint Committee." Again: "He said without fear of contradiction that the Manchester Corporation had done, and were now doing, everything to purify their effluent to the highest degree. Having done that to treat them as they had been treated was unjust, and an act of persecution." But if the action of the Joint Committee was unjust now it was so a year ago when proceedings were taken against Manchester; it was the same when Salford was proceeded against, and when Bolton, Bury, and all other authorities in the watershed were put under pressure; and at all these earlier periods Mr. Thompson was a member of the Joint Committee and its honoured vice-chairman. Manchester had been treated exactly in the same way as all the other authorities, the only difference being that Manchester, largely through the eloquence and influence of Mr. Thompson, had had extra time granted to her.

Referring to the statement of the principles and methods of the Joint Committee as set out in the memorandum of the 2nd November, 1896: Mr. Killick said that from that statement he took the following extract,—"In December, 1891, on the recommendation of Sir Henry Roscoe, a resolution was passed stating that it was undesirable to define the maximum amount of pollution to be allowed, but to insist upon the best practicable and available means being used in each case, whether a sanitary authority or a manufactory." Further, in the proceedings of November, 1894, it would be found that Sir Henry Roscoe again stated, "It must be distinctly understood that the standards named are only adopted for the purpose of criticising and comparing the results in these particular cases, and must not be taken as definite standards. The sub-committee have had before them the results of over 1,000 analysis of samples of sewage effluents taken under various circumstances and conditions from the sewage works in the watershed. It was clear from the consideration of these analyses that in order to render the water fit to go into the stream by the removal of the soluble putrescible organic matter, in other words, to prevent secondary decomposition, the amount thereof must be reduced to the limits referred to in the November report of 1894. These limits of impurity were based upon experimental evidence proving that an effluent below or up to them would not putrify when discharged into small streams or into sluggish waters such as the Manchester Ship Canal, but above them putrefaction would arise, and it may be observed that at all sewage works in the watershed where only chemical treatment is adopted the effluent is almost invariably above, and on the other hand where sewage works adopt filtration the effluent is below the limits. Before proceedings are directed other chemical details and investigations in addition to the limits of impurity are carefully considered." Those were the lines on which the Joint Committee was working, and they were laid down by its chemical adviser, Sir Henry Roscoe. The Committee was justified in abiding by Sir Henry Roscoe's advice, as it had been sustained when challenged in a court of law. The limits of impurity were as follows: One-tenth grain per gallon albumoid

ammonia, one quarter grain oxygen per gallon, three minutes' reaction, one grain oxygen per gallon, four hours' reaction. Mr. Killick proceeded to give figures showing what were the analyses of the tank effluents from the Davyhulme works this year. These showed, he said, that Manchester was not doing so well this year as last, that their pollution was two to three times the amount of the limits, and that their effluent is much worse than the water of the Manchester Ship Canal into which it was turned. But these effluents were from precipitation alone, and were, he presumed, those referred to by Mr. Thompson when he said, "The Rivers Committee had done everything they could with their present knowledge to satisfy the Joint Committee. In Sir Henry Roscoe's report of June 30th there was an analysis of Manchester filtered effluents, both of which were reported as being clear and colourless, containing a little oxide of iron in suspension, and with no smell. So Mr. Thompson was mistaken when he said "the Corporation could not satisfy that authority by any means in their power."

THE POSITION OF THE JOINT COMMITTEE.

Continuing, Mr. Killick said the Corporation could and had turned out an effluent treated by precipitation and filtration which was quite satisfactory to the Joint Committee. In July, 1896, the Joint Committee were informed that the Corporation were so treating four millions of gallons, or one-sixth of their daily flow. Questions as to the methods of obtaining a satisfactory effluent, and the relative cost of treatment, were for the Manchester Corporation and not for the Joint Committee to solve. It might be pointed out that Manchester had taken part in compelling authorities in the watershed to spend more money per head of the population than the highest estimates of the most costly schemes yet put forward for their own adoption. Mr. Thompson commended the Joint Committee for keeping out of the streams "the coarse substances, such as cinders," but the Joint Committee was formed to keep out of the streams liquid sewage pollution and liquid manufacturing pollution as well as solids. Otherwise the accusation would be true that the Joint Committee was created simply for the benefit of the Manchester Ship Canal. The Mersey and Irwell Joint Committee was a statutory body which existed for the purpose of putting into operation in the area over which it had jurisdiction the Rivers Pollution Prevention Act of 1876 and the Mersey and Irwell Joint Committee Act of 1892. In these Acts the powers exercised by the Committee were clearly set out, and the rights of manufacturers and authorities were carefully guarded. If the Committee was misusing or exceeding its powers, surely it was better to appeal to the law than to accuse it of injustice and persecution.

A PLEA FOR GENEROUS TREATMENT.

Sir John Hibbert asked the Committee to look upon the matter in a kind and reasonable manner. Mr. Thompson filled positions which regarded as being antagonistic, and he asked them—he did it on his own account also—to deal with the matter in a generous manner. Personally, he took exception to the words used by Mr. Thompson at the meeting where he said Manchester had been treated unjustly, and that the treatment was an act of injustice. He could not, of course, allow those words to go by without saying that he did not for a moment believe that anything of the kind had been done with respect to Manchester. As chairman of that Joint Committee he had thought it his duty to hold the balance between Manchester and the other local authorities in the watershed in the most even manner, and he had always said they must treat all upon one common equality. He considered that Manchester had been treated in that way, and he thought they would all agree with him that there had been no justification for saying that they had any desire or intention to persecute Manchester. They all admitted that the case of Manchester was a very difficult one. Manchester had a very large population, and consequently had a very large volume of sewage to treat, but what they had asked other authorities to do they must ask Manchester to do. He could not believe that a city like Manchester, which had been so successful in bringing pure water from Thirlmere, was going to be baffled and overcome by the difficulty of dealing with their sewage. The difficulty was just as great for the small authorities as it was for the large towns. It really had become a question whether Manchester should be compelled to spend a large sum of money on their sewage, but as they had a scheme before the burgesses at the present time he did not see how he could say a word about it. It was a matter to be fought out by the Corporation and their own constituents, and he did not want to say anything to add to the difficulty. He could not, however, avoid referring to the many letters on the subject which had appeared in the newspapers. They were written by lawyers and other persons who seemed to think they knew how to deal with their business better than themselves. In conclusion, the speaker said that he trusted that while the Joint Committee would be firm they would at the same time generously consider the difficulties Manchester had to overcome. Without being harsh they might be firm.

After some few other observations the report of the Consulting Sub-committee was passed.

THE MANCHESTER SEWAGE WORKS.

THESE works, which are situated at Davyhulme, were visited on Monday by the members of the Manchester City Council. So far, over £200,000. has been spent at Davyhulme, and the estimated cost of the culvert scheme is over a quarter of a million.

THE SITE

of the works is situate on the south side of the Manchester Ship Canal, which they adjoin at a point about 500 yards above Barton locks, and also at the lower side of these locks, where a landing stage and jetties have been constructed for the purpose of loading the new sludge steamer. The total area of land belonging to the Corporation, including the approach to the Ship Canal below Barton locks, is about 149 acres, which is made up as follows.—Precipitation tanks, $7\frac{1}{2}$; buildings, sludge tanks, and land used in connection therewith, 11; filter beds (completed), $26\frac{1}{4}$; land for future works, including existing roads and embankments, $92\frac{1}{2}$; wharves and lay-byes, $4\frac{1}{4}$; disused river bed now being filled up with compressed cake, and in part utilised as garden allotments for the labourers on the sewage works, 7. The buildings and precipitation tanks are placed on the south-east side of the land.

The population now contributing to the sewage of the city is estimated at 535,000 persons. The sewage from an estimated population of about 480,000 persons is at present intercepted by the main drainage system, and conveyed to Davyhulme. The remainder will be intercepted as soon as the sewers now approaching completion are finished. The average daily flow of sewage is about 40 gallons per head of the population; therefore, assuming the future population to be 650,000, the ultimate dry-weather flow will be about 26,000,000 gallons per day. The time occupied in passing the sewage when treated with lime and copperas through a precipitation tank is on an average about $1\frac{1}{2}$ hours. The clarified liquid, or effluent, flows over the sills at the north end of the tanks into the open carrier, by which it passes to the filters or to the Ship Canal.

WORKS IN COURSE OF CONSTRUCTION.

Works are now in course of construction in connection with the removal of the sludge from the precipitation tanks to the new sludge steamer. They consist of an underground ejector chamber opposite the press-house. To this chamber the sludge will gravitate and enter ejectors, which are in duplicate. These ejectors will discharge it through a line of 10in. pipe, also in duplicate, to two sludge storage tanks now being constructed near to the wharf on the high ground recently purchased. These tanks have a total storage capacity of 2,000 tons, which is equal to two cargoes, or about three days' normal accumulation of sludge. The ejectors are circular cast-iron vessels, which hold 300 gallons each; they are worked at a normal pneumatic pressure of 28lbs. to the square inch, and when started continue to fill and empty automatically. By having two tanks near to the wharf the time for loading the vessel will be very materially reduced, and with this object in view the pipe leading from these tanks to the vessel is 24in. in diameter.

THE SLUDGE STEAMER.

The steamer is similar to the last sludge steamer (*Burns*) built for the London County Council, with the exception that the saloon accommodation has been omitted. The carrying capacity is a 1,000 tons, and the dimensions are as follows:—Length of deck, 243ft. 6in.; length between perpendiculars, 234ft.; breadth moulded, 38ft.; depth moulded, 14ft. 6in.; draft loaded, 10ft. draft light, 7ft.

EXPENDITURE ON WORKS.

The following is a summary of the cost of the site of the works at Davyhulme, and the expenditure on the tanks and equipment, including the cost of the works now in progress:—Cost of site, £39,308.; tanks, outfall works, and filtration area, works for addition of chemicals to sewage, screen house and machinery, and for sludge disposal, additional tramways and paving of roads (now in progress), £143,677.; sludge steamer, £24,500.; total, £207,485.

NEAR IT, VERY NEAR IT.—Our worthy contemporary, the *Oil and Colourman's Journal*, in its October issue, has good humouredly corrected the errors we were tempted to point out in their article on the "American Tariff and the English Chemical Trade." Fate, however, seems against them, for in correcting the *wording* of the statement of duty on bleaching powder, they have now got the *duty* wrong. The error of $\frac{1}{6}$ of $\frac{1}{5}$ is evidently due to one of those unavoidable but irritating mistakes that will occur with the best of "comps." and "readers." Still as our contemporary refers to the matter this month "for the sake of accuracy," we thought it as well to help them get it next time, and we hope they will take our little squib in the same good-natured and sympathetic spirit as we make it. If to err is human, and the errors are sometimes humorous, the divine virtue of forgiveness is transcendental.

THE CHILIAN NITRATE INDUSTRY.

COST OF PRODUCTION.

SEÑOR DON ALBERTO HERKMAN, in the *Boletín de la Sociedad Nacional de Minería* states that the cost of production at three nitrate mines is as follows:—

	San Jorge. Cents.	Puntunchara. Cents.	San. Pablo. Cents.
Extraction of the caliche..	27'68	32'47	59'40
Carting	12'90	23'46	21'26
Dressing	32'08	37'62	48'89
General costs	7'22	9'01	12'87
Various	0'17	1'32	....
Totals.....	80'05	103'88	142'42

The Chilean nitrate industry has to contend against the competition of artificial soda manures and sulphate of ammonium (the output of which rapidly increases year by year), the discovery of nitrate deposits in other parts of the world, and the competition of guanos rich in nitrogen, phosphoric acid and potash, like those recently discovered in the island of Corcovado, Peru. Lately, as is well known, the Chilean industry has been suffering a serious depression. The continuance of this is having an alarming effect on both the revenue and trade of Chili.

A SELF-HELP POLICY.

Signs are not wanting, says the Chilean correspondent of the *Financial News*, that most of the companies have begun to realise that the days of large and easily-made profits are over, and that close attention to business and the strictest economy in working are essential to set off the decline in prices. Something has already been done in this direction by some companies, and much more will doubtless follow soon, in which case many of the companies may enjoy continued prosperity for a number of years; for nitrate is not a product likely to lose its value all at once, and if the competition of other fertilizers affects the European market to such an extent as to make it necessary, the Chilean Government can, and doubtless will, assist the industry by making an appreciable reduction in the duties levied.

At the same time, this will not be done by Government, except in its own interests, as a last resource; so that it behoves the nitrate companies to do all that they can to help themselves in the first instance.

THE RHYMNEY IRON COMPANY'S AFFAIRS.

CONSIDERABLE stir has been caused in South Wales by statements made by directors of the Rhymney Iron Company in their circular convening, as desired by requisition, an extraordinary meeting of shareholders which is to be held at Cannon-street Hotel, London, on Friday this week. The directors remind the shareholders that when the late chairman retired and the present Board came into office many years ago, a question arose, and a meeting was held seriously to consider it, as to whether the Company should cease working and be put into liquidation. The board, then reorganised, came to the conclusion that to prevent such a catastrophe to the Company and to the many thousands of workers depending on it would be worth every effort they could make, and the directors rendered themselves personally liable for no less a sum than £70,000., which alone enabled them to save the Company from liquidation. As regarded the re-establishment of the steel works, that would involve a very heavy expenditure, perhaps far more than the Committee had any idea of, and certainly more than the shareholders would be inclined to furnish for such a purpose. Further, the steel works if re-established would have to be worked in competition not only with English works, but also with American works, which were now turning out steel at a cost with which the most modern English works would find it difficult to compete. The directors also declared that they would be no parties to the policy of handing over the Company to local shareholders as against the interests of the general body. A committee meeting of some of the dissentient shareholders was held recently at Cardiff, and a circular was drawn up replying to various points raised by the directors. It is alleged that the erection of a modern steel plant, at an expenditure of a quarter of a million of the shareholders' money, and its subsequent abandonment and the loss of that sum was due to the want of prescience of some members of the present board, and they contend that the steel works, if economically worked, would pay, as other large steel works in South Wales, such as Dowlais, Cyfartha, and Blaenavon, are paying even at the present day. They also intimate that all they want the extraordinary meeting to do is to appoint a committee of investigation.

NEW WHISKY AGEING PROCESS.

RECENTLY a number of pressmen, engineers, and experts in whisky were afforded an opportunity of personally inspecting the new plant of the Spirit Cleaning Syndicate, Limited, at Nine Elms, London. The claim of the patentee is that he has invented a process by which new whisky can be as effectually cleaned in four or five hours as it would become if stored in a cask for many years, and it is needless to say that if this ageing process can be gone through as indicated a complete revolution will take place in the trade. The process, shortly indicated, consists of exposing the largest surfaces of spirit and air to each other by means of a spray, and under the influence of a temperature of about 32 degs. F. The air and spirit only come into contact once, and the low temperature at which the latter is maintained condenses it and prevents the operation resulting in the whisky losing aroma or flavour, and thereby being rendered what is known as "thin." There is very little loss of strength, about 1 to 1½ per cent., and the operation can be varied as required to suit different manufactures of whisky. The time of working is four or five hours, according to the size of the plant and the quantity of spirit to be treated. The plant consists of ammonia compressor, condenser, refrigerator, and spray vessel, driven by steam. The operation was seen recently in full work, and the way in which the spirit is handled by the patentee would lead one to expect a great loss, so thoroughly is the atomising done. The loss, however, remains trivial, and the air laden with amyl alcohol which escapes and is led to some little distance from the plant, clearly shows by the sense of smell the nature of the impurities which are being taken from the spirit. The company present at the experiments included many of the most prominent chemists in the country, and they one and all pronounced the invention to be as perfect as it could be on its scientific side. What it means commercially may be understood without expert assistance.

THE PETROLEUM INQUIRY.

THE report of the Select Committee appointed to inquire into the law relating to petroleum and other inflammable liquids was issued on Tuesday as a Blue Book. The Committee were of opinion that at so late a period of the session it would not be in their power to conclude their investigations, and they therefore agree to report the evidence already taken to the House and to recommend that a committee on the same subject should be appointed early in the next session of Parliament.

THE FLASH-POINT TO BE RAISED TO 105 DEGREES.

The London correspondent of the *Liverpool Daily Courier*, says:—"Relying on the opinion of a Board of Trade official who has been acting in connection with the inquiry of the Parliamentary Committee on Explosive Oils, I predict that the Committee will recommend the raising of the test point to 105 degrees Abel. Before the Committee last adjourned it was rumoured that they were prepared to recommend 100 degrees, but I now hear that this point is felt to be insufficient, and the higher test approved. The Committee's report will be presented early in the session. Only a little further evidence is desired."

AS OTHERS SEE US.

If the above be realized, says our fearless contemporary, *Food and Sanitation*, the Board of Trade deserves well of the public, and at the same time it ought not to be forgotten that it is to our own plain speaking, during the past three years; to the trenchant articles in *The Star*, which alone amongst daily papers took the trouble to investigate this, in every sense, "burning question," and last, but by no means least, to the able, scientific, and strong attitude of *The Chemical Trade Journal*, that the full iniquity of the 73 degree flash-point has been made known.

To the credit of English journalism it may be said that even the American oil gang's millions have not enabled them—save in a couple of the very lowest journalistic quarters—to secure Press champions. We hope the flash-point will be raised to 105 degs. F., for it will close satisfactorily for the public a very shameful episode of how science can be bought, and Parliament can be hounded to do deeds dooming a person per day to be roasted alive.

NITRATE STATISTICS.—The Permanent Nitrate Committee's public statistical circular for October states:—"Nitrate of soda—total exports to Europe, September, 2,135,000 quintals; loading for Europe, October 1st, 2,500,000 quintals. Imports, Europe, September, 69,350 tons; deliveries, Europe, September, 45,330 tons; visible supply, Europe, October 1st, stocks and afloat, 414,110 tons."

Reports of Companies.

CASTNER-KELLNER ALKALI COMPANY, LIMITED.

THE following is the full text of the interim report referred to last week:—At the annual meeting held last March the directors were requested, after a lapse of six months, to issue an interim report to inform the shareholders of the progress in the erection of the company's works, and the working of the first installation of 1,000 h.p., which at that date was in partial operation. The first installation has been at work without intermission since the annual meeting, gradually increasing its output up to its full capacity, and is now producing caustic soda of exceptional purity, and bleaching powder of the market standard of strength, in quantities equal to the power employed, thus realising the anticipations formed as to the cost of the working of the plant and process. The second installation of equal capacity, namely 1,000 h.p., is far advanced towards completion, and during the winter will be in operation. The total cost of production with the first installation, compared with the net market prices obtained for the product, is very satisfactory, notwithstanding that the market prices are not so high as when the company was formed. The directors are pleased to announce that they have entered into a very favourable contract for the sale of all the bleaching powder that can be produced by the company for three years from July last. The caustic soda is of such excellence that no serious fluctuations are to be anticipated in its price, and no difficulties in the prompt disposal of the total output of the company. Under these circumstances, when the second installation is in full operation, the product of the two combined, judging from the experience of the first, will realise a substantial profit on the capital called up, together with the vendor's shares, which will rank *pro rata* with it. The directors have reckoned results on the manufacture of caustic soda, and not caustic potash, as the market for the one is assured, and for the other it is somewhat problematical at the present time: but if it should prove to be desirable, the whole plant or any portion of it can be at once turned on to the production of caustic potash. These prospects have led the directors to decide to proceed with all despatch with the erection of the third and fourth installations, to increase the output of the works to its fullest capacity of 4,000 h.p., as originally proposed. With this power they estimate that the return on the capital employed will be considerably higher on the four installations than on the two installations. In this estimate the directors have allowed for the interest to be paid on some capital which will have to be provided to complete the third and fourth installations, as announced at the shareholders' meeting last March, in addition to that to be realised by the last call of 4s. a share. The directors have therefore decided to call up the remaining 4s. per share, and to procure such further capital as they require for the rapid completion of the third and fourth installations, seeing that there will be no difficulty in disposing of the full product of the works on very favourable terms, and that the anticipations of the directors as to cost and production of the general working of the plant and process have been realised from the installation now at work. The work will now be pushed forward as rapidly as possible, with the view that the four installations may be in operation by the middle of next year, which will enable the full output of the works to be disposed of under the contract now running for a then period of two years. Meanwhile, the first installation will enjoy the benefit of the contract from July last and onwards, and the second installation from January next and onwards. The further capital necessary to complete the works will be raised by the issue of preference shares, or by debentures, as may be subsequently determined. The property of the company, consisting of large and valuable works in full and profitable operation, should render preference shares at a moderate rate of interest a desirable investment for the shareholders of the company.

SAN PABLO NITRATE CO. LTD.

The directors, in submitting to the shareholders the ninth annual report and audited balance sheet for the year ended June 30, 1897, state that as a result of the year's working a credit balance in profit and loss of £1,103. os. 10d. has been added to the amount brought forward from the previous year, viz., £770. 7s. 3d. After deducting income-tax the balance remaining amounts to £1,374. 9s. 11d. This the directors recommend shall be carried forward. Under the adverse circumstances of both limitation of output and low ruling prices, the result, the directors state, is as satisfactory as might have been expected. Although success was obtained in making sales of a portion of the company's quota for 1896, the balance could not be sold at a profit. On account of the continued depression the directors decided in July last to stop manufacture. Expenses have been reduced to a very small sum. The stocks of nitrate and *caliche* have been carried forward at a lower price than cost to meet the present depressed condition of the market. The directors have again waived their fees.

ANGLO-SICILIAN SULPHUR CO., LTD.

The extraordinary and ordinary general meetings of the Anglo-Sicilian Sulphur Company, Limited, were held on Wednesday, this week, at Winchester House, Old Broad-street, E.C., Mr. William Thomas Brand (the chairman) presiding.

The Chairman said: You have heard the notice read convening the meeting. Is it your pleasure to take the report and accounts as read? A few weeks ago you confirmed at a second special meeting the resolutions which were already passed at a former special meeting, held upon September 17th, allowing the company to declare dividends on our preference capital, both fully and partially paid up. I have now the pleasure to ask you to adopt the report and accounts, and to declare a dividend at the rate of 6 per cent. per annum from August 1st last on our fully-paid preference shares, and from the dates of payment into the bank on our 15s. partly-paid preference shares, and to declare a dividend of 1d. per share on our 1s. ordinary shares, which is equal to $8\frac{1}{2}$ per cent. But before doing so I should like to tell you something as to the

PROGRESS OF THE BUSINESS

since its commencement. Our year's accounts, although they include a year's working expenses, only represent about nine or ten months profits in Sicily, as the abolition of the export duty did not take effect until October 1st, and we could not be said to have commenced our profit-making business till then, although we had to engage and organise our staff both here and in Sicily, and expenses began to run from early in August. During our financial year in Sicily we received 267,795 tons. This quantity would have been larger, but some of the mine owners had contracts entered into previous to those made with this company, under which they had to deliver some 50,000 tons of sulphur, and of this amount about 40,000 tons were delivered during the past financial year, leaving some 10,000 tons still to deliver. We sold and delivered during our financial year 156,017 tons of Sicilian sulphur at an average gross profit of about 8s. 6d. per ton. As regards that part of the company's business which is represented by recovered sulphur, prior to the completion of the arrangements with the United Alkali Company, they had sold for delivery through 1897, at various prices (some being lower than the contract price with this company), about 9,000 tons of sulphur, which entailed a loss to the company of between £1,300. and £1,400. But, as these arrangements were made by the organisers of this company, your directors had to accept the contracts, or else to reject the English business as a whole, which it was not thought advisable to do. I am glad to say that sales since May have wiped out such parts of the loss as came into the past financial year and left a profit of some

£3,100. ON THE ENGLISH BUSINESS.

During the year we have entered into contracts with the principal refiners of Catania to refine sulphur for the company at a fixed remuneration per ton, the company handing to them the crude sulphur and receiving it back as refined. This business, although it will add somewhat to our expenses, will, we believe, substantially add to our profits and give us a greater control of the market. As regards the prospects for our current financial year, I think they are hopeful and satisfactory. We have already sold at various dates to December 31 a considerable quantity of Sicilian sulphur at satisfactory prices, about half of which sales are for prompt delivery prior to the present date. We have also sold up to about 14,000 tons of refined sulphur under our contract with the Catania refiners; but a part of this will, in all probability, not be delivered till after July next. We have also sold 10,000 tons of English recovered sulphur for delivery prior to December 31 next, absorbing the remainder of the make for the year 1897. So we have commenced our year well, and I hope that when I have the pleasure of addressing you next year the balance-sheet will show considerably increased profits. As to the balance-sheet, you will all, doubtless, have studied it. Our gross trading profits amount to £63,752. 3s. 11d., which added to interest on temporary investments, etc., makes a gross profit of £68,383. 2s. 6d. Our expenses in Sicily, £10,415. 3s. 7d., and in London, £8,614. 4s. 3d., which include the management of the English part of the business, legal and accountancy charges, income-tax on profits, directors' fees, etc., making £19,029. 7s. 10d. in all. We have written off £6,433. 0s. 3d., being one-fifth of the goodwill, preliminary expenses, and depreciation, leaving £42,920. 14s. 5d. to be dealt with. Out of this we propose to pay the dividends on the preference shares, which amount to £30,129. 2s. 4d., placing £2,558 6s. 5d. to the capital guarantee fund (under articles of association Nos. 13 and 17), and also placing £7,020. 6s. 11d. to general reserve. Of the balance, £3,212. 18s. 9d., we carried £321. 5s. 10d. to the credit of the preference shareholders (and as this sum is too small for division, we carried it forward), and we pay 1d. per share dividend to the ordinary shareholders. This accounts for the £42,920. 14s. 5d. nett profits of the year. I think I have omitted to say why there are two denominations of preference shares, and it is this—that under the agreement with Mr. Florio we paid for the sulphur which we purchased from him in shares.

There is another matter to which I wish to refer. In our circular of August 12th mention was made of the desire of many important shareholders that we should try to get the company's shares recognised, not only in London, but also on the Paris Stock Exchange, and I am pleased to inform you that we have received assent relative to this matter from all except three of the registered preference shareholders and all except one of the registered ordinary shareholders, the totals being 688,900 out of 700,000 preference shares and 627,500 ordinary shares. Of the balance of the ordinary shares 64,500 were warrants to bearer. After this meeting such steps as may be possible will at once be taken to give effect to these wishes. In the report there were two omissions; one was to state that Sir Charles Tennant, Bart., and Mr. A. M. Chance, sen., are trustees for the company, and the other was that the word junior was omitted from that of our colleague, Mr. A. Macomb Chance. Now, before asking you to adopt the report and accounts and to declare the dividend, I shall be very happy to answer any questions which any shareholder may wish to put as far as I can.

Mr. Gordon Salomon seconded the adoption of the report, and said that he regarded the outlook as hopeful.

SHAREHOLDERS' CRITICISMS.

Sir Henry Cartright remarked that at the inception of the company it was stated that the company would have nominal control over 80 per cent. of the Sicilian sulphur output. From what the chairman had stated he inferred that that promise had broken down, and that they had not got control over that portion. He would like that explained. As regarded the London expenses, he thought that £8,000. was very heavy.

A shareholder inquired whether it was likely that the expenses would be on the same scale in future as they had been last year.

Dr. Grigg asked the chairman to explain why there had been a loss of £1,300. by the arrangement which the company had made with the United Alkali Company. He also took exception, with the other shareholders, to the enormous cost of managing the company. The directorate was 15 in number, which he considered unusually large.

The Chairman, in reply, stated that as regarded the 80 per cent. of sulphur, that was based on a total output of 350,000 tons; but last year the output amounted to 400,000 tons, and the increase was principally from outside producers. The amount consigned was less than it would have been because, as he had already told them, the mine owners who had contracted with the company had previous to doing so contracted for about 50,000 tons to other people. Those contracts had to be fulfilled, and of that 50,000 tons some 40,000 tons had been delivered during their past financial year. As regarded the expenses, they certainly would not be less in the future. They had taken over the Catania business, which would mean extra expense as well as, he believed, extra profit. As to the expenses in London, they included rent, the management, and sale of the English recovered sulphur; they also included all legal expenses, directors' fees, and income-tax. As far as the directors' fees were concerned, he might state that they were entitled to very much larger fees, but the directors themselves had this year accepted fees reduced to a large extent because the company, although working for twelve months, had only had from nine to ten months of the profits earned in Sicily, and practically only seven months of the profits earned in England. He had omitted to state how the loss of £1,300. arose in connection with the English contracts.

A shareholder inquired whether it was necessary to have so large a sum as £221,624. for temporary investments.

The Chairman stated that since the balance-sheet was made out the item of temporary investments had already been diminished considerably, and it would decrease very much more with the dividends recommended by the directors, and also by the drafts to be drawn from Sicily for sulphur delivered during the ensuing months.

The resolution was then put to the meeting and carried unanimously.

OIL AND NATURAL GAS IN BRITISH COLUMBIA.

IN the same section of British Columbia as the Crow's Nest coalfields extensive deposits of oil and natural gas are known to exist. The deposits were not known until 1891. They were discovered by the Stony Indians. This tribe of Indians lives in the Morley reservation, near Banff, which is intersected by the C. P. Railway. The summer hunting grounds of these Indians extend along the foot-hills and eastern slopes of the Rockies. Occasionally they crossed through the South Kootenay Pass in the Rockies and came out into the Tobacco Plains in East Kootenay. Rarely, however, did they do this, as they would be apt to come into conflict with the Kootenay Indians, whose hunting grounds were on the west side of the Rockies. This pass is forty miles south of the Crow's Nest. Its summit is seven miles from the boundary line.

These oilfields on both sides of the Rockies were visited by Dr. Selwyn, of the Geological survey of Canada, in 1891, and he gives a description of them in the summary report of 1891.

Crossing from the south, after leaving the pass, the first oil deposits are in the Kishneena Creek. These are found about four miles north of the 49th parallel, and are where trail comes down to the level of the stream. At this place are the remains of a beaver dam. Here are ledges of dark blue slate, dipping east by north. Lifting layers of this slate at and below the water, a quantity of dark green circular patches of oil arise to the surface, and a precisely similar result followed by stirring up the mud in the bottom of the pool. Oil is said, by the Stony Indians who frequent this region, to occur at other points. The Kishneena joins the Flathead River in Montana, about four miles south of the international boundary. The beaver dam oil is of a dark greenish black, and does not apparently differ much from that of Cameron Falls Creek. Preliminary tests have been made here by sinking a shaft in the shales at the beaver dam pool, and by boring on the sandy and gravelly flat country about two and a half miles north of the boundary line.

The next deposits are in Sage Creek, which leaves the mountains that border its upper course in a north-easterly direction up to the main watershed some twelve miles distant, and here at the edge of the water, on the left bank, are dark flinty shales like those at the beaver dam pool on the Kishneena. Directly the layers of this rock are raised, the oil rises and spreads over the surface of the water in such abundance that a short time suffices, with the aid of a tin cup, to collect a bottle full.

Less than half a mile higher up, on the right bank and on the opposite or west side of the valley, oil is again found issuing from the base of the bank or drift, which has here filled the valley and causes the stream to make a sharp bend eastward to the base of the opposite mountain. Every stone on the bed of the creek on being broken or rubbed gives out a strong odour of petroleum. The oil collected here differs entirely in appearance from that of Kishneena Creek. Some of it is of a light lemon-yellow, but most of it nearly the colour of pale brandy and with a very powerful petroleum odour.

In Sage Creek are also deposits of natural gas, large quantities of which escape from the cracks and crevices in the rocks. These escapes are easily lighted by a match, and a long flame rises upwards. No tests have been made on these gas deposits to ascertain their extent. Forming the same conclusions from similar data given elsewhere, as in the Pennsylvania coal fields and gas deposits, these deposits should be of great extent. The oil, which is petroleum, is not of the same character, that of East Kootenay being purer. The Sage Creek oil has been proved to be the purest that has been found.

Trade Notes.

IODINE IN FRANCE.—The Co-operative Iodine Society of France, which up to the present has not shown very brilliant results, announces that about half a ton of crude iodine (the monthly amount reckoned upon) was produced during July, and that it now hopes "very soon to execute the numerous orders received daily."

NEW ZEALAND SULPHUR.—The sulphur industry at Rotorua, New Zealand, is rapidly growing to some importance. The managers have about 200 Europeans and Maories employed in preparing it for export. The beds are situated at Tikitere, about ten miles from Rotorua. The sulphur is dug out and put into bags and conveyed to Auckland and Sydney.

AUSTRALIA AND THE PAPER TRADE.—Europe is at present the chief source of supply for the Australasian trade, and it is satisfactory to find, from the reports above quoted, that a marked preference exists for papers of English manufacture. In view of the circumstances, and the increased attention which the Australian market is about to receive from American makers, it is hardly necessary to point out that British exporters would do well not to relax their efforts to cater for the technical requirements of the Australian trade.

ACETYLENE GAS.—THE DANGER LIMIT.—The Explosives Department of the Home Office, Whitehall, has recently had under consideration the question of the restriction to be applied to the manufacture and keeping of acetylene gas, and has conducted various experiments with the object of gaining information on this matter. The results show conclusively that acetylene gas *per se*, when under a pressure of something less than two atmospheres, is violently explosive; whereas at a pressure of less than one and a half atmospheres it appears to be reasonably free from liability to explosion, provided it is not admixed with oxygen or atmospheric air. For commercial and practical purposes it is considered sufficient to allow a pressure of twenty inches of water above that of the atmosphere (*i.e.*, roughly about one-and-one-twentieth atmospheres), and it is accordingly proposed to draw the safety line at this point and to declare acetylene, when subject to a higher pressure, to be an "explosive" within the meaning of the Explosives Act, 1875. In France and Germany the authorities have fixed the limit of danger at one-and-a-half and one-and-one-tenth atmospheres respectively, and have imposed prohibitions or restrictions on the keeping or manufacture of the gas when it is at a higher pressure.

Obituary.—The death is announced of Mr. William Marriott, of Ashgrove, Deighton, Huddersfield, manufacturing chemist, at the age of 84. He was born in 1813, and went to Huddersfield in 1843. Almost from the first he had taken great interest in educational matters. He was early connected with the old Mechanics' Institute, and later with the Technical School and Technical College into which the Institute developed. He was elected a member of the first Huddersfield School Board in 1871, and continued on the Board till 1883, for some time acting as chairman. He was a member of the Town Council from 1868 to 1873, and from 1874 to 1880. He was placed on the Commission of the Peace in December, 1892.

SUNLIGHT SOAP WORKS IN AMERICA.—It is reported that W. H. Lever, of the Lever Brothers, manufacturers of Sunlight soap, will sail for America next month, for the purpose of establishing works at some point near New York. This is said to be rendered necessary by the increased duty on soaps under the new tariff. The concern has been making a strong effort to establish a trade in the States for a number of years, and has spent a considerable amount of money in the aggregate. It has never made great headway, but has probably acquired a better idea of the magnitude of the American market than it had originally, and this fact, as well as the increase of duties, may have something to do with the proposition to establish works in that country.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols quiet, but steady at 1s. 11½d. to 2s. for 90's and 2s. to 2s. 1d. for 50/90's. Tar products as a whole are quiet, particularly carbolic acids, in which there are no quotable changes. Solvent naphtha is strong, but without alteration in prices, nearest values being 1s. 7d.; and crude 11d. Creosote and naphthalene firm. Anthracene steady at 5½d. for 30% A and 4d. to 4½d. for B. Pitch a little better at 19s. 6d. to 20s. 6d., f.o.b. East Coast.

Sulphate of ammonia is rather quieter. Stocks are low, and the prospect is encouraging compared with what it has been. At the close the market is slacker, though prices are steady. Beekton is quoted £7. 16s. 3d. in certain quarters, but this sudden drop from £7. 18s. 9d. needs confirmation. London outside makes are variously quoted from £8. 1s. 3d. to £8. 2s. 6d., Liverpool £8. 3s. 9d. to £8. 5s., Hull £8. 1s. 3d. to £8. 2s. 6d., and Leith £8. 1s. 3d. to £8. 3s. 9d., all prompt.

MISCELLANEOUS CHEMICAL MARKET.

Business during the past week has been dull, and there is little to report, most articles remaining unchanged. Bleaching powder sells freely for prompt and early delivery at £6. 7s. 6d. rails and £6. 12s. 6d. f.o.b. Caustic soda steady and in fair demand, but without change in price. Prices to-day are—70% £7, and 60% £6, rails, makers' works. Saltcake has good inquiry, but price does not improve. Chlorate of soda and potash flat and unchanged. Sulphate of copper, £16. 10s. to £16. 15s., f.o.b. Litharge strong, and £17. is to-day's quotation. Lead salts firm in price, but there is no large amount of business passing. Foreign white, £23. c.i.f. Nitrate, £20. to £21. per ton. Acetates of lime at last have taken a turn for the better, and we expect to see prices considerably higher ere long. To-day's values are—brown, £5. 7s. 6d. to £5. 10s., and grey £8. 10s. Acetic acids quiet, and are still offered at former rates. Acetate of soda is selling at unremunerative figures, due principally to the supply being in excess of the demand. White powdered arsenic rather quiet, and prices have a slightly weaker tendency; to-day's price, £21. 10s. to £21. 15s. per ton. Sulphocyanides are offered freely, and prices are consequently low: Barium, 4d., ammonium, 6d. per lb. Nitrate of soda is steadily maintained at £7. 7s. 6d., but there is not much business doing. Oxalic acid, 3½d. per lb. Borax flat at £14. 10s. Yellow prussiate of potash firm at 5½d. per lb. The demand for fine chemicals is below the average.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron: Scotch warrants closed at 44s. 6½d.; Middlesbrough, 42s. 1½d. cash; and hematite, 47s. 4d. Copper steady: Chili bars, G.O.B.'s and G.M.B.'s, closed at £48. 18s. 9d. to £49. 3s. 9d. cash, and £49. 5s. to £49. 10s. three months. Tin steady: Straits closed at £62. 2s. 6d. to £62. 12s. 6d. cash, and £62. 13s. 9d. to £63. 3s. 9d. three months; Australian, £63. 2s. 6d. English ingots, £65. 10s. Lead firm: Spanish, £13. 15s. to £13. 16s. 3d.; English, £14. Silesian spelter, ordinary, £17. 17s. 6d. Nickel, 1s. 2½d. Antimony, £29. 10s. Quicksilver: First hands, £6. 15s.; second hands, £6. 14s. 6d. Copper shares steady: Cape, 2½ to 2½; Copiapo, 1¾ to 2; Libiola, 2½ to 2½; Masou

, 2½ to 3½; Rio Tinto, 25½ to 25¾; Tharsis, 6½ to

OW, WEDNESDAY.—Market quiet, and a small business. One at 44s. 7d. and 44s. 6½d. cash; also at 44s. 9d., and 44s. 9d. one month; buyers, 44s. 6½d. cash; sellers, Cleveland done at 42s. 3d. one month; buyers, 42s. 1½d. less, 1d. more. Cumberland hematite done at 47s. 4½d. 47s. 7d. one month; buyers, 47s. 4d. cash; sellers, 47s. 5d.ough hematite, buyers, 49s. cash; sellers, 49s. 3d.

REPORT ON MANURE MATERIAL.

tone pervades the market, but quotations for phosphatic are firmly maintained. There being considerable requirement the North Sea and Baltic to fill, 6¼d. per unit can now do for those destinations, but there are no buyers for U.K. uivalent. Sales of South Carolina and Algerian 58/63% ring been made at 5d. per unit, c.i.f. to good U.K. ports. now asking 5¼d. for early shipment, but 5d. would still be for 1898 shipment. There is nothing doing in River Plate ast Indian bone meal hangs fire at £3. 17s. 6d. per ton, for £3. 17s. 6d. per ton has been paid for 50 tons crushed bones, ex store. Nitrate of soda is quiet at 7s. 4½d. per dinary and 7s. 6d. per cwt. for fine quality.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

—Palm oil is a quiet market, and prices are nominal, ving been practically no business doing either for forward. There being very little olive offering prices remain ised is easier and there is little doing even with Liverpool 16s. 3d. to 17s. 3d. per cwt. in export casks. The tendency ss in cottonseed has been fulfilled, Liverpool refined now 16s. 3d. to 17s. 0d. per cwt., and quiet thereat. Castor oil a good demand, especially for immediate delivery. Good alcutta figures at 3¾d. per lb., and first pressure French lb. Tallow is firm but quiet, there being but few sales to esin is decidedly firm for all grades, in a fairly good spot. Spirits of turpentine have continued to advance, and the firm, with sellers at 25s. 9d. per cwt. on spot. Petroleum last quoted.

—Scarcity has caused an advance in West American linseeds, g a fair demand at £6. to £6. 5s., Liverpool makes, £6. to and moving nicely thereat. Choice decorticated cottonseed,), is quiet at £5. 15s. to £6. 5s., but Liverpool makes have fair demand at £6. 5s. to £6. 17s. 6d. Liverpool undeorady and in fair request at £4. 1s. 3d. to £4. 10s., according

Egyptians have been well inquired for, but this spurt in the mainly due to the decline to £3. 15s. per ton.

JRS.—Prices are steady, and practically without change. Oxfordshire—common £10., medium £12., best £15.; e—common 40s., medium 50s., best 60s.; Welsh—best 90s., os., and common 18s.; Irish, Devonshire, 40s. to 45s.; C., 65s. Umber: 40s. to 45s. White lead: £16. Red angled. Venetian red: £6. to £10. Cobalt: Prepared 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; £10.; finest, £20. Zinc oxide: £22. 10s. to £25.

L PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

—An important announcement is made to-day that the North-lailway Company are prepared to re-introduce their Bill for sion here, which, it may be remembered, failed to pass the tary Committee last session, after hanging by a thread for

The situation here in the oil trade contains many features undesirable, the blame for which must evidently rest with

Very large quantities of raw oil are being imported, whilst rs here are very slack, especially with linseed and rape oils. st commodity the refiners are altogether dependent upon applies. The stocks of seed here for the month ending

r, against August, are: Linseed, 15,414 qrs., against 22,583 seed, nil, against 1,030 qrs.; cottonseed, 1,181 tons, against

s. The imports of seed during same period have been t., against 57,187 qrs. August: Rapeseed, 295 qrs., against

cottonseed, 10,494 tons, against 7,061 tons. Linseed oil ot, 13s. 10½d. per cwt., naked; last three months, 14s. 3d.;

our months, 14s. 7½d. Refined and boiled, £1. to £1. 10s. xtra. Refined cotton oil dull: Spot, 14s. per cwt., sellers;

April, 13s. 7½d., sellers. Barrels £1. 10s. and ordinary , per ton extra. Olive oil quiet: £30. to £32. per tun,

to origin. Olive soaps from £16. 10s. per ton. Oleines nced £1. to £1. 5s. per ton, and quoted £17. to £20. per

ton. Turpentine, 25s. per cwt. Cod oils, £15. to £18. per ton. Stockholm tar, 22s. 6d. per barrel. Castor oil firm from 3¾d. per lb.

CAKES.—Linseed cakes: Demand quiet, but prices firm; 95% pure, £7. 2s. 6d. to £7. 5s. per ton. Oilcakes, £6. 2s. 6d. to £6. 5s.; Russians, £6. 17s. 6d. to £7. per ton; Americans, October, £6. 12s. 6d. to £6. 15s. Cotton cakes: Fresh orders scarce. Best makes, £4. 5s. to £4. 6s. 8d.; seconds, £4. 2s. 6d. to £4. 3s. 9d. per ton; November-April, best, £4. to £4. 1s. 3d. No rape cakes.

PAINTS.—Business quiet; prices unchanged.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

After last report sulphate of ammonia began to show signs of some change from the upward progress for some time so steadily held to. Probably the close of the month with the usual reaction after providing for the needs of the monthly period accounts to a considerable extent for the lowered quotations. Perhaps the state of the market for nitrate of soda has something to do with it. Prompt value to-day is no more than £8. 1s. 3d. to £8. 2s. 6d. Leith, but makers' views with regard to forward dealing may be said to be still on the rise. One maker who got £8. 7s. 6d. recently, professes to be looking for a little more now. The ordinary market for chemicals continues in rather an active condition, and some of the sorts are difficult to be had for continental shipment before the closing of the inland navigation. Sulphate of copper is stronger and a little higher in price. Mineral oils and solid paraffins all as before.

Chief prices current are:—Soda crystals, £2. 12s. 6d., nett, Tyne, soda ash, 48/62°, £4. 2s. 6d. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £4. 17s. 6d. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 10s., 70/72° £7. 10s., 60/62° £6. 10s., and cream 60/62° £6. 5s. all nett, Liverpool; bleaching powder, 35/37°, £6. 5s. nett, Tyne; saltcake, 19s.; borax English, refined, £14. 15s. and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4d. less 5%, any port; nitrate of soda, 7s. 4½d. to 7s. 6d.; sulphate of ammonia, £8. 1s. 3d. to £8. 2s. 6d. prompt, f.o.b. Leith; salammioniac, first and second white, £33. and £31. nett any port; sulphate of copper, £16. 15s. less 5% Liverpool; paraffin scale, hard, 1¾d. to 1½d., per lb., soft 1½d. per lb.; paraffin wax, 120° semi-refined, 1¾d. to 2d. per lb.; paraffin spirit (naphtha), 6½d. to 7d. per gallon; paraffin oil (burning), No. 1, 5½d., and crystal, 6d., at Glasgow and other big centres, for Scotch buyers (English sales a shade lower); ditto (lubricating) 86° £4. 15s. to £5. 5s., 88° £5. 15s. to £6. 5s., and 89°/89° £6. 10s. to £7. Week's imports of sugar at Greenock were nil.

TYNE CHEMICAL REPORT.

TUESDAY.

The chemical market is practically unchanged. Soda crystals are scarce at £2. 12s. 6d. per ton, gross weight, locally. Bleach, £6. 5s. to £6. 10s. per ton. Caustic, 76/77%, £9.; 70%, £7. 10s. per ton. Sulphur firm at £5. per ton.

Bleaching powder, softs, £6. 10s. per ton, nett; hards, £6. 15s. per ton, nett; caustic soda, 70% £7. 10s., and 76/77% £9. per ton; recovered sulphur, 2 cwt. bags, £5. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. 6d. per ton, nett; do., 52%, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95% crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminite of soda, £30. per ton, nett.

SALT.—South Durham salt is firm at 9s. to 9s. 6d. per ton, f.o.b. Tees.

COALS.—Trade continues steady, and there is a good demand for Best Northumbrian steam, gas, and bunker coals. Coke is also firm, and shipments appear on the increase. Best Northumbrian steam, 8s. 6d. to 8s. 9d. per ton; second qualities, 7s. 6d. to 7s. 9d. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; gas coals, 7s. 9d. to 8s. 3d. per ton; bunker coals, 7s. 6d. to 8s. per ton; coke, 19s. to 21s. per ton.

Germany, 18 cks.	T. H. Lee
Canada, 62	Morgan Crucible Co.
Potassium Bicarbonate —	
Holland, 28 cks.	A. & M. Zimmermann
Potassium Carbonate —	
Germany, 39 c.	Petri Brs.
" 40	R. W. Greeff & Co.
" 220	J. M. Steel & Co.
Potassium Chloride —	
Germany, 50 bgs.	Bessler, Waechter, & Co.
Holland, 14 cks.	H. Johnson & Sons
Potassium Oxymuriate —	
Sweden, 300 kgs.	G. Boor & Co.
Potassium Permanganate —	
Holland, 8 cks.	Phillipps & Graves
Potassium Sulphate —	
Belgium, 300 bgs.	R. Waters
Quicksilver —	
Spain, 21 bbls.	H. J. Enthoven & Son
Italy, 100 flks.	H. Bath & Sons
Rosin —	
U. States, 202 brls.	F. & S. Chiesman & Co.
" 200	M. D. Co.
Saltpetre —	
Belgium, 20 cks.	Petri Brs.
E. Indies, 1,049 bgs.	J. W. Cook & Co.
" 1,330	Lucas & Spencer's Wf.
Soda —	
Belgium, 600 c.	Sawer, Sons, & Co.
Sodium Acetate —	
France, 240 bgs.	J. Harrison
" 76 cks.	"
" 25	H. Wallace & Co.
Sodium Bichromate —	
Germany, 51 cks.	A. J. Neele
Sodium Phosphate —	
Belgium, 1 ck.	G. Kahler & Co.
Starch —	
Holland, 135 cs.	T. H. Lee
Belgium, 360	F. Claydon & Co.
France, 59	W. E. Cole
" 40	J. Barber & Co.
Holland, 200	E. Olyett & Sons
Belgium, 140	Becker & Wagner
Holland, 80	Phillipps & Graves
" 60	Herru, Peron, & Co.
Belgium, 120	Leach & Co.
Germany, 120	Phillipps & Graves
Belgium, 40	C. Tennant, Sons, & Co.
Holland, 1,776	Little & Johnston
Germany, 5 bgs.	Dunlop Brs. & Co.
France, 8 brls.	Beck & Pollitzer
Belgium, 550 cs.	E. & T. Pink
" 220	J. Harrison
" 260	T. H. Lee
" 400	G. S. N. Co.
U. States, 135 brls.	Beck & Pollitzer
Holland, 1,218	Vokins & Co.
Stearine —	
France, 310 bgs.	G. Boor & Co.
" 250	H. Hill & Sons
Belgium, 50	10 cks. "
Sulphur —	
Italy, 23 t.	M. D. Co.
" 28	Nich's Wvs., Ltd.
Sulphuric Acid —	
Germany, 38 pks.	Elkan & Co.
Talc —	
E. Indies, 440	Carter, Paterson, & Co.
Italy, 40	C. F. Gerhard
Tar —	
N. Russia, 300 brls.	J. Greig
" 2,445	Linck, Moeller, & Co.
Channel Islands, 22,033 glns.	Burt, Boulton, & Co.
Tartaric Acid —	
Holland, 17 pks.	F. C. Devon & Co.
" 8	B & F. Wf. Co.
" 28	Kirkpatrick & Co.
" 5	H. Lorenz
" 2	Brummerstaedt & Loders
Ultramarine —	
Holland, 12 cs.	Herru, Peron, & Co.
" 11 pks.	J. Barber & Co.
Germany, 4 cks.	Taylor Brs.
" 4	J. Kitchin, Ltd.
" 10 cs.	"
Holland, 25 pks.	Thames S. T. & L. Co., Ltd.
Varnish —	
U. States, 20 pks.	C. T. Ward
" 6	Dawson Brs.
Belgium, 2	W. Gerson & Co.
U. States, 6	Taylor Brs.

White Lead —	
Belgium, 40 cks.	W. A. Hampton
" 100	T. & W. Farniloe, Ltd.
Germany, 42	Randall Brs.
" 17	A. G. Soutter & Co.
" 25	N. J. Fenner & Co.
France, 17	H. B. Alder & Co.
Norway, 20	W. H. Carey & Sons
Holland, 90	R. W. Greeff & Co.
" 20	T. & W. Farniloe, Ltd.
Wood Pulp —	
Canada, 259 pks.	E. J. & W. Goldsmith
Sweden, 250	Horne & Co.
" 251	Ekman Pulp & Paper Co.
Norway, 1,200	W. E. Bott & Co.
" 1,000	Johnsen & Jørgensen
Germany, 613	E. J. & W. Goldsmith
Sweden, 6	C. Gee & Co.
Germany, 50	Perkins & Homer
Holland, 1,370	London Paper Mill Co.
Germany, 400	H. C. Everett
Belgium, 1,737	E. J. & W. Goldsmith
Sweden, 560	Henderson, Craig, & Co.
Zinc Oxide —	
Holland, 175 brls.	M. Ashby, Ltd.
U. States, 300	"
" 200 cks.	"
Holland, 500	Soundy & Sons
Germany, 50	D. Storer & Sons
" 11	R. W. Greeff & Co.

LIVERPOOL.

Week ending September 23rd.

Alumina Hydrate —	
Antwerp, 8 cks.	J. T. Fletcher & Co.
Antipyrine —	
Rotterdam, 1 bx.	"
Barytes —	
Antwerp, 20 cks. 50 bgs.	"
Rotterdam, 22	"
Bone Black —	
Philadelphia, 20 brls.	"
Borate of Lime —	
New York, 1,564 bgs.	Halfour Williamson
Caoutchouc —	
Valparaiso, 5 bls.	International Bank of London
Mollendo, 25	Kleinwort, Sons & Co.
" 114	J. H. Schroder & Co.
Chemicals (otherwise undesignated)	
Hamburg, 13 cs.	"
Chrome Ore —	
Sydney, 7,120 bgs.	M'Ilwraith M'Eachen
Cod Oil —	
St. John's, Nfld., 287 cks.	Job Brs. & Co.
Colours —	
Rotterdam, 24 cks. 7 pks.	"
Ghent, 3 brls.	"
Cottonseed Oil —	
New York, 50 brls.	"
Cream of Tartar —	
Barcelona, 5 cks. 20 brls.	"
Tarragona, 2	"
Bordeaux, 24	"
Dyestuffs —	
Antwerp, 11 cs.	"
Argols —	
Oporto, 28 cks.	"
Cochineal —	
Las Palmas, 13 bgs.	Canary Islands Trading Co.
Fustic —	
Tampico, 2,089 sticks	N. Waterhouse & Sons
Orchella —	
Lisbon, 9 bgs.	A. Barbosa & Co.
Farina —	
Hamburg, 370 bgs.	H. Tyrer & Co.
Glucose —	
New York, 150 brls.	"
Glue —	
Hamburg, 20 bgs. 20 bls.	"
Rouen, 2 bls.	R. J. Francis & Co.
Rotterdam, 3 cs. 69 bgs.	"
Iron Oxide —	
Gijon, 1,065 sks.	"
Lamp Black —	
New York, 100 brls.	"

Limestone —	
Antwerp, 3 cs.	J. T. Fletcher & Co.
" 2 crts.	"
Manganese —	
Antwerp, 20 t.	"
Manganese Ore —	
Coquimbo, 2,170 t.	"
Mica —	
Havre, qty.	"
Molasses —	
N. Orleans, 1,000 brls.	"
Ochre —	
Rouen, 22 cks.	R. J. Francis & Co.
Oxalic Acid —	
Hamburg, 8 cks.	"
Paint —	
Boston, 13 cs.	"
Hamburg, 65	M. Nichols & Co.
" 10 dms.	"
Paraffin Scale —	
New York, 940 brls.	Thompson & Bedford
Valparaiso, 4	"
Philadelphia, 1,020	Anglo-Am. Oil Co. Ltd.
" 100	"
Phosphate —	
Ghent, 350 t.	"
Plumbago —	
Genoa, 100 bgs.	"
Potash —	
Hamburg, 10 cks.	"
Montreal, 24 brls.	J. Webster & Son
Pyrites —	
Huelva, 1,688 t.	Matheson & Co.
Rosin —	
New York, 1,194 brls.	"
Baltimore, 1,550	"
Saltpetre —	
Bombay, 555 bgs.	"
Hamburg, 6 cks. 125 kgs.	"
Soap —	
Hamburg, 100 cs.	"
Smyrna, 7	"
Boston, 20	J. Thompson
" 4	Barclay & Sons
" 3	R. Horendon & Sons
Constantinople, 1	"
Soapstone —	
Genoa, 100 bgs.	"
Starch —	
Hamburg, 43 cks. 376 cs.	"
Boston, 220 brls.	"
New York, 36	J. Armstrong & Co.
Antwerp, 330 cs.	J. T. Fletcher & Co.
Rotterdam, 25 cs.	"
Stearine —	
Antwerp, 25 bgs.	J. T. Fletcher & Co.
Tallow —	
Sydney, 763 cks.	Lever Brs.
Hamburg, 3 cks.	"
Philadelphia, 150 tcs.	"
Tar —	
Archangel, 2,524 brls.	"
Tartaric Acid —	
Hamburg, 1 ck.	"
Treacle —	
Philadelphia, 1,400 brls.	"
Boston, 880	"
New York, 300	"
Ultramarine —	
Hamburg, 2 cks. 6 cs.	"
Rotterdam, 16	"
Waste Salt —	
Hamburg, 586 cks.	H. Tyrer & Co.
" 2,134 bgs.	"
" 210 t.	Vickers & Co.
White Lead —	
Antwerp, 12 cks.	"
Rotterdam, 51	"
Wood Pulp —	
Holmstrand, 3,350 bls.	H. Tyrer & Co.
Skien, 1,000	"
Boston, 571	"
New York, 200 brls.	Christie & Co.
Rotterdam, 294 bls.	"
Zinc Oxide —	
New York, 100 brls.	"
Hamburg, 50 cks.	"
Antwerp, 25 brls.	"

MANCHESTER.

Week ending September 25th.

Alizarine —	
Rotterdam, 50 cks.	"
Aluminous Cake —	
Rotterdam, 106 cks.	"
Annatto —	
Bordeaux, 1 cs.	J. & P. Hutchison
Antimony Salts —	
Rotterdam, 1 ck.	"
Barytes —	
Antwerp, 110 bgs.	"
Bone Ash —	
Rio Grande Sul, 506 t.	"
Chemicals (otherwise undesignated) —	
Rotterdam, qty.	"
Chrome Alum —	
Rotterdam, 5 cks.	"
Colours —	
Boulogne, 12 cks. 1 cs.	"
Rotterdam, 9 11 and qty.	"
" 31 brls. 6 bxs	"
Farina —	
Stettin, 750 bgs.	Browne, Geveke, & Co.
Rotterdam, 1,074	"
Stettin, 110	"
Hamburg, 95	"
Glucose —	
Stettin, 118 cks.	"
Glue —	
Rotterdam, 120 bgs.	"
Antwerp, 20 bls.	"
Guano —	
Lobos D' Afuera, 1,240 t.	Leventon & Co.
Limestone —	
Antwerp, 2 crts.	"
Mineral White —	
Bordeaux, 300 bgs.	J. & P. Hutchison
Pitch —	
Bordeaux, 35 cks.	J. & P. Hutchison
Potash —	
Boulogne, 39 dms.	"
Pyrites —	
Huelva, 1,708 t.	"
Sodium Sulphate —	
Rotterdam, 18 cks.	"
Starch —	
Hamburg, 6 cs.	"
Rotterdam, 100	"
Antwerp, 444	"
Tartaric Acid —	
Rotterdam, 26 cks.	"
Waste Salt —	
Hamburg, qty.	"
Wood Pulp —	
Hamburg, 51 brls.	"
Zinc Oxide —	
Rotterdam, 48 brls.	"
Zinc White —	
Rotterdam, 30 cks.	"

HULL.

Week ending September 25th.

Alizarine —	
Rotterdam, 41 pks.	W. & C. L. Ringrose
Alumina —	
Rotterdam, 203 bgs.	W. & C. L. Ringrose
Barytes —	
Bremen, 23 cks.	"
Amsterdam, 46	Hutchinson & Son
Antwerp, 193	Bailey & Co.
" 55 bgs.	Leatham, J. J.
Rotterdam, 67 cks.	W. & C. L. Ringrose
Chemicals (otherwise undesignated)	
Antwerp, 21 pks.	Wilson, Sons, & Co., Ltd.
Dunkirk, 4 dms.	"
Cod Oil —	
Bergen, 5 brls.	Wilson, Sons, & Co., Ltd.
Christiania, 70	"
Drontheim, 5	"
Bergen, 35	"
Colours —	
Rotterdam, 1 ck.	Hutchinson & Son
" 45 pks.	W. & C. L. Ringrose
Ghent, 17 cks.	Wilson, Sons, & Co., Ltd.

Hamburg, 2 cs. Bailey & Leatham, Ld.	Ultramarine— Rotterdam, 3 cks. W. & C. L. Ringrose	Pumice Stone— Leghorn, 50 bgs. Messina, 30 cks.	Wood Pulp— Christiania, 500 bls.
Antwerp, 23 pks. Wilson, Sons, & Co., Ld.	White Lead— Rotterdam, 28 cks. Hutchinson & Son	Rosin— New York, 1,150 brls.	Zinc White— Rotterdam, 25 cks. Tyne S. S. Co.
Dunkirk, 34 cks. "	Amsterdam, 24 "	Starch— New York, 150 sks.	
Cottonseed Oil— New York, 200 brls. Wilson, Sons, & Co., Ld.	Antwerp, 49 Leatham, Ld.	Antwerp, 20 bgs.	
Farina— Harlingen, 424 bgs. W. & C. L. Ringrose	Wood Pulp— Bergen, 191 pks. Wilson, Sons, & Co., Ld.	Ghent, 190 cs.	
Antwerp, 20 Leatham, Ld.	Hango, 176 bls. J. Good & Sons	Stearine— Rotterdam, 19 cks. J. Rankine & Son	
Stettin, 100 Wilson, Sons, & Co., Ld.	Zinc Oxide— Rotterdam, 5 cks. Hutchinson & Son	Tartar— Bordeaux, 7 cs.	
Glucose— New York, 250 bgs.	" 25 W. & C. L. Ringrose	Tartaric Acid— Rotterdam, 2 cks. J. Rankine & Son	
Glue— Rouen, 12 cks. Rawson & Robinson		Treacle— New York, 500 brls. Waddall & Bryson	
Hamburg, 20 bgs. Wilson, Sons, & Co., Ld.		Rouen, 12 cks. J. Rankine & Son	
Linseed Oil— Amsterdam, 170 brls. Hutchinson & Son		Rotterdam, 12 cks. J. Rankine & Son	
Lithopone— Amsterdam, 40 cks. Hutchinson & Son		Ultramarine— Rotterdam, 2 cks. J. Rankine & Son	
Minium— Rotterdam, 8 cks. Hutchinson & Son		Waste Salt— Hamburg, 152,400 kilos.	
Naphthol— Rotterdam, 2 cks. W. & C. L. Ringrose		White Lead— Rotterdam, 10 cks. J. Rankine & Son	
Ochre— Rouen, 21 cks. Rawson & Robinson		Whiting— Dieppe, 79 cks.	
Phosphate— Ghent, 816 bgs.		Wood Pulp— Christiania, 2,880 bls. 27 cs.	
Pitch— Copenhagen, 50 brls. Wilson, Sons, & Co., Ld.		Zinc Ashes— Antwerp, 8 cks.	
Potash— Hamburg, 4 cks. Wilson, Sons, & Co., Ld.		Zinc Oxide— Rotterdam, 10 cks. J. Rankine & Son	
Pyrites— Huelva, 900 t.		Zinc White— Rotterdam, 110 cks. J. Rankine & Son	
Quicksilver— Hamburg, 8 btlis. Wilson, Sons, & Co., Ld.			
Saltpetre— Rotterdam, 2 cks. Hutchinson & Son			
Antwerp, 135 bgs. Wilson, Sons, & Co., Ld.			
Soap— Riga, 5 cs. Wilson, Sons, & Co., Ld.			
Soda— Antwerp, 120 bgs. Bailey & Leatham, Ld.			
" 150 Wilson, Sons, & Co., Ld.			
Starch— Ghent, 358 cs. Wilson, Sons, & Co., Ld.			
Bremen, 3,239 Veltmann & Co.			
Amsterdam, 280 Hutchinson & Son			
Tallow— New York, 60 brls. Wilson, Sons, & Co., Ld.			
Dunkirk, 161 cks. "			
Tar— Danzig, 12 brls. Wilson, Sons, & Co., Ld.			
Tartaric Acid— Rotterdam, 5 cks. W. & C. L. Ringrose			
Treacle— New York, 225 brls. Wilson, Sons, & Co., Ld.			
Turpentine— Libau, 53 brls.			

GLASGOW.

Week ending September 30th.

Acetic Acid— Rotterdam, 7 cks.	Asbestos— Genoa, 17 cs.	Barium Chloride— Rotterdam, 8 cs. J. Rankine & Son	Barium Sulphate— Antwerp, 250 bgs.	Barytes— Rotterdam, 88 cks. J. Rankine & Son	Chemicals (otherwise undescribed) Hamburg, 52 cks.	Colours— Antwerp, 4 cks. 5 cs. 2 cs. 107 pks. J. Rankine & Son
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Cottonseed Oil— New York, 48 brls.	Cream of Tartar— Barcelona, 33 cks.	Dyestuffs— Alizarine Rotterdam, 12 cks. J. Rankine & Son	Aniline Rotterdam, 14 cks. J. Rankine & Son	Extracts New York, 5 bdlis.	Shumac Palermo, 2,400 bgs.	Glue— Genoa, 24 cks. 5 29 10 bgs. J. Rankine & Son
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Guano— Cape Cross, 600 t. Lawes Chemical Manure Co.	Lead Acetate— Rotterdam, 17 cks. J. Rankine & Son	Paint— Boston, U.S.A., 1 brl.	Phosphate of Lime and Rock— Antwerp, 50 bgs.	Potash— Montreal, 19 brls. 51 pks. J. Rankine & Son
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Waste Salt— Hamburg, 152,400 kilos.	White Lead— Rotterdam, 10 cks. J. Rankine & Son	Whiting— Dieppe, 79 cks.	Wood Pulp— Christiania, 2,880 bls. 27 cs.	Zinc Ashes— Antwerp, 8 cks.	Zinc Oxide— Rotterdam, 10 cks. J. Rankine & Son	Zinc White— Rotterdam, 110 cks. J. Rankine & Son
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TYNE.

Week ending September 25th.

Alum Earth— Hamburg, 46 cks. Tyne S. S. Co.	Asbestos— Hamburg, 2 crts. Tyne S. S. Co.	Barium Chlorate— Rotterdam, 350 bgs. Tyne S. S. Co.	Barytes— Rotterdam, 266 bgs. Tyne S. S. Co.	Castor Oil— Antwerp, 28 brls. Tyne S. S. Co.	Chemicals (otherwise undescribed) Hamburg, 290 t. Clephans & Wiencke	Colours— Rotterdam, 1 cs. Tyne S. S. Co.	Limestone— Antwerp, 6 crts. Tyne S. S. Co.	Paint— Arendal, 2 cs. Matthiessen & Co.	Phosphate— Antwerp, 260 bgs. Tyne S. S. Co.	Soap— Rotterdam, 7 cs. Tyne S. S. Co.	Sodium Nitrate— Antwerp, 20 bgs. Tyne S. S. Co.	Starch— Rotterdam, 100 cs. Tyne S. S. Co.
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Wood Pulp— Christiania, 500 bls.	Zinc White— Rotterdam, 25 cks. Tyne S. S. Co.
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GOOLE.

Week ending September 22nd.

Alizarine— Rotterdam, 69 brls.	Alkali— Calais, 6 cks.	Antimony— Boulogne, 4 cks.	Barytes— Antwerp, 200 bgs.	Caoutchouc— Boulogne, 5 cks.	Colours— Hamburg, 2 cks. 2 cs.	Dyestuffs (otherwise undescribed) Rotterdam, 318 cks. 107 cs. 50 7 20 pks.	Farina— Hamburg, 50 bgs. 554	Potash— Dunkirk, 6 cks. 20 drs. Calais, 25	Potassium Carbonate— Hamburg, 10 cks.	Saltpetre— Rotterdam, 100 bgs. Hamburg, 9 cks.	Soap— Rotterdam, 3 cs.	Starch— Ghent, 147 bks.	Tartaric Acid— Antwerp, 8 cks. Rotterdam, 2	Waste Salt— Hamburg, 812 bgs. 60 cks. 130 t.	Wood Pulp— Rotterdam, 105 bls. Hamburg, 108
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GRIMSBY.

Week ending September 25th.

Albumen— Dieppe, 6 cks.	Aniline— Hamburg, 6 cks. 32 pks. Antwerp, 44	Caoutchouc— Hamburg, 13 cs. Rotterdam, 2	Chemicals (otherwise undescribed) Rotterdam, 10 cks. Antwerp, 1 cs.	Colours— Antwerp, 5 cs. 20 pks. Hamburg, 45 cks. 2	Dyestuffs (otherwise undescribed) Dieppe, 5 cks.	Starch— Antwerp, 70 cs.	Wood Pulp— Helsingfors, 80 bls. Sundsvall, 5,268	Zinc Ashes— Antwerp, 8 cks.
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EXPORTS OF CHEMICAL PRODUCTS

OF

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending September 29th.

Acids— Delagoa Bay, 8 cs. £45	Ammonia— Uerdingen, 20 dms. £149	Ammonium Chloride— Sydney, 11 t. 10 c. £250	Treport, 30 11 24
Durban, 13 10	Cologne, 9 71	Samsoun, 1 10 48	Bremen, 100 75
New York, 76 120	E. London, 5 cs. 15	Batoum, 2 60	Rouen, 84 14 648
	Ammonium Carbonate— Paris, 1 t. 19 c. £54	Constantinople, 2 10 78	Bordeaux, 20 10 165
	St. Petersburg, 7 10 200	Ammonium Sulphate— Paris, 124 t. 9 c. £1,000	Teneriffe, 1 12
			Dunkirk, 11 10

190 39	1,506 280	Coal Products (otherwise undes.)— Christiania, 50 frks. £16 Jersey, 2 cks. 20	Sodium Tartrate— Montreal, 12 c. £33	Caustic Soda— Adelaide, 8 dms. Algoa Bay, 62 cs.
6 t. 9 c.	£89	Copper Sulphate— New York, 256 t. £4,217 Odessa, 10 178 Hamburg, 6 11 c. 107 Pt. Elizabeth, 13 11 Danzig, 2 17 47 Rouen, 15 263	Sulphur— E. London, 15 brls. £10	Bahia, 30 Baltimore, 100 85 pks. Barcelona, 100 72 Bari, 29 Bilbao, 360 Bombay, 50 Bremen, 5 brls. B. Ayres, 50 cs. Cartagena, 10 Copenhagen, 20 Corunna, 20 cks. Genoa, 50 Hamburg, 115 Hio, 500 La Guayra, 10 Lisbon, 50 Madeira, 5 Malaga, 5 brls. Manila, 260 Melbourne, 69 11 cs. 15 crts. Montreal, 50 Pelotas, 20 Piræus, 20 Quebec, 25 Rangoon, 35 Riga, 50 Rotterdam, 47 St. Petersburg, 100 San Sebastian, 115 54 cks. Santos, 60 Seville, 712 Sydney, 46 Tampico, 100 Valencia, 15 Valparaiso, 20 Yokohama, 35
20 dms.	£7	Cream of Tartar— Cape Town, 5 c. £26 Melbourne, 1 t. 10 117	Tartaric Acid— New Plymouth, 2 c. £15 Odessa, 1 13 Cape Town, 2 14 Brisbane, 15 94	
50 161 cks.	1,328	Disinfectants— Delagoa Bay, 6 cs. £14 Bombay, 80 dms. 21 Odessa, 30 cks. 10 Hamburg, 20 kgs. 26 Calcutta, { 50 cks. 774 dms. 157 26 pks. 48 Penang, 100 dms. 85 Singapore, 125 5 cks. 14 Durban, 5 cs. 15 New York, 3 10 dms. 15	LIVERPOOL. Week ending September 29th.	
24 13 cs. 28 tubes	£78	Dried Blood— New York, 2 t. £114	Acetic Acid— Santos, 1 t. 4 c. 1 q. £18	
18 c.	£16	Manure— Cape Town, 5 t. £70 Rochefort, 100 300 Bordeaux, 60 265 Adelaide, 255 £88 Auckland, 153 326 Genoa, 24 8 c. 57 Stettin, 39 98 Durban, 14 4 66 Barbadoes, 50 350 Jersey, 150 1 631	Alum— Bahia, 1 t. £5 Santos, 1 5 Natal, 1 2 c. 6 Lisbon, 10 3 3 q. 51 Patras, 2 15 2 13 Demerara, 3 10 1 20 B. Ayres, 4 20 Victoria, B.C., 1 10 7	
1 t. 9	27	Nitric Acid— Jersey, 48 crbys. £84	Aluminoferrie— Genoa, 2 t. £6	
10 15	13	Oxalic Acid— Yokohama, 1 t. £33	Ammonium Carbonate— Sydney, 1 t. 5 c. £26 Stettin, 3 84 Danzig, 1 10 43 Seville, 18 22 Genoa, 2 11 2 q. 73	
(otherwise undescribed)	£69	Oxygen— Amsterdam, 1 cs. £45	Ammonium Chloride— Alexandria, 2 t. 10 c. £78 Barcelona, 2 16 54 Rosario, 11 16 Genoa, 6 16 124 Patras, 4 c. 6 Demerara, 10 c. 2 q. 16 Rotterdam, 6 9 Oporto, 2 4 Bahia, 5 6 Trieste, 2 61	
10 kgs.	18	Phosphate— Treport, 9 t. 17 c. £60	Ammonium Sulphate— Antwerp, 100 t. £900 Valencia, 10 1 q. 80 Leghorn, 10 2 c. 81 New York, 50 406 Gd. Canary, 25 10 235 Madeira, 1 8 Nantes, 32 9 3 260 Santa Cruz de Tenerife, 5 41 Rouen, 21 2 3 170 Lisbon, 5 37 Venice, 30 9 240 Barcelona, 110 1 1 940	
2 t.	232	Potash— Wellington, 1 t. 8 c. £52 La Plata, 11 20	Bleaching Powder— Baltimore, 110 cks. 60 pks. Boston, 345 B. Ayres, 50 brls. Calcutta, 105 cs. Corunna, 4 cks. Genoa, 177 Havana, 10 Leghorn, 71 Lisbon, 17 Montreal, 43 New York, 51 Philadelphia, 25 Rotterdam, 47 Rouen, 110 San Francisco, 50 brls.	
10	62	Potash Salts— Auckland, 6 t. 4 c. £470	Boracic Acid— Rotterdam, 1 t. £27 Adelaide, 1 2 c. 1 q. 30 New York, 1 26	
60 pks.	11	Potassium Bicarbonate— Philadelphia, 2 t. 4 c. £57	Borax— Hamburg, 1 t. 8 c. £21 Salonica, 1 10 22 Kinterje, 3 2 60 Melbourne, 1 20 Copenhagen, 14 18 255 Antwerp, 10 10 Amsterdam, 4 1 81 Ghent, 1 2 22 Venice, 1 16	
25 kgs 19 15 dms. 418	£67	Potassium Chloride— Colombo, 15 t. 6 c. £150	Calcium Chloride— New York, 10 t. 3 c. 1 q. £22 Boston, 30 1 58	
1 c.	232	Potassium Cyanide— New York, 2 t. 186 Penang, 10 cs. 60 Maryborough, 5 t. 50 Melbourne, 25 210 Sydney, 30 260 Auckland, 3 8 c. 325 Pt. Elizabeth, 10 840	Carbolic Acid— Hamburg, 1 t. £70 New York, 1 q. 43 Montreal, 1 63 Calcutta, 3 cs. 41	
10	62	Potassium Permanganate— Bombay, 3 c. £10	Caustic— Delagoa Bay, 20 cks. £20	
10	60	Potassium Prussiate— Rouen, 1 t. £46 Paris, 1 49		
1	7	Saltetre— Sydney, 2 t. 10 c. £50 Venice, 16 15 Santos, 4 7 88 Odessa, 6 17 123 Bahia, 2 5 46 Rio de Janeiro, 4 7 89 Lisbon, 3 13 69		
2	7	Sheep Dip— B. Ayres, 19 t. 18 c. 55 cs. £640 Beira, 24 dms. 1 10 Bahia, 33 t. 3 c. 750 Delagoa Bay, 1 17 Dunedin, 10 16 113 dms. 250 Melbourne, 5 13 162 Auckland, 7 150 Wellington, 23 6 515 Blenheim, 6 17 150 Pt. Elizabeth, 70 dms. 14 Rio Gallegos, 4 cks. 1,129 pks. 2,439		
2 t.	232	Soda Ash— Rio de Janeiro, 12 t. 15 c. £53		
10	62	Soda Crystals— Alexandria, 3 t. 1 c. £9 Shanghai, 3 6 10		
1	7	Sodium Biearbonate— Montreal, 5 c. £6 E. London, 1 7 Pt. Elizabeth, 2 14 Brisbane, 2 15		
51 cks.	£175			
1 cs.	£6			
1 bx.	12			
1 cs.	£10			
12 dms.	£430			
10	330			
13 cks.	90			
1 kg. 21 brls.	£120			
52 cks.	400			
610 cks.	£1,215			
370	1,099			
250 cks.	£165			
216 cks. 60 puns.	£1,381			
16 brls.	£14			
500	350			
770 bgs.	£97			
28 cks.	£84			
400 bgs.	£217			
1 ck.	£12			
300 brls.	£140			
136 t.	210			
25 brls.	15			
360 cks.	91			
810 t.	1,245			
25 brls.	23			
150 t.	154			
10 brls. 5 crts.	9			
10 cks.	1			
20 dms.	6			
500 cks.	187			
506 550 bgs. 200 brls.	404			
980 t.	1,122			
500 cks.	230			
2 dms.	£82			
20 dms.	£6			
950 cks.	407			
23 dms.	11			
200 cks.	110			
350	182			
24 brls.	10			
670 dms.	74			
73 cks.	£98			

Guano—			Salt—			B. Ayres,			Tartaric Acid—		
Barcelona,	49 t.	4 c.	Abonneau,	27 t.		Copenhagen,	250	100 brls. 100	New York,	10 c.	
Malaga,	124	17	Akassa,	602	14 c.	Corfu,		40	Rangoon,	1	24.
Indigo Waste—			Ambrizette,	7	3	Genoa,	960		Varnish—		
Montreal,	1 t.	11 c.	Amsterdam,	110		Ghent,	100		Aldera,	51 kgs.	
Lime—			Antwerp,	356	16	Gutujewsky,		80	Constantinople,	1 cs.	
Lagos,	12 t.	2 q.	Baltimore,	250		Hamburg,	300	30	Leghorn,	3	1 dm.
Magnesia—			Belize,	130		Hiogo,		567	Naples,	4 pks.	
Corunna,	2 cs.	1 brl.	Benin,	15	12	Leghorn,		18	Porto Alegre,	2	
Havre,	6		Boston,	100		M. Video,		100	Santander,	2 cks.	
New York,	4		Brass,	18		Montreal,		16 tcs.	White Lead—		
San Francisco,	10		B. Ayres,	1	10	New York,	350	48	Aldera,	102 kgs.	
Seville,	5		Buguma,	18		Pelotas,		30	Cuidad Bolivar,	1 ck.	
Magnesium—			Calcutta,	3,763		Philadelphia,	2,050	164	Zinc Chloride—		
New York,	3	£97	Degama,	1,250 bgs.	1,000 sks.	Piraeus,		50 brls.	Maranham,	9 c.	3 q.
Magnesium Sulphate—			E. London,			Rotterdam,	1,613		Zinc Oxide—		
Madras,	40 cks.		Galveston,	1,100	1,500	San Sebastian,	150	605	San Francisco,	1 cs.	
Manure—			Ghent,	110 t.		Stettin,	200		MANCHESTER		
Valencia,	25 t.	11 c.	Gd. Bassam,	284 bgs.		Sydney,		21	<i>Week ending September 29th.</i>		
Bordeaux,	24	10	Libau,	2,480		Zante,	100	397	Aniline Oil—		
Oxalic Acid—			Landana,	3,000	600	Soda Crystals—			Hamburg,	10 cks.	2 dms.
Smyrna,	1 t.	5 c.	Manaos,		1,075	Alicante,	20 bgs.		Aniline Salts—		
San Francisco,	1 t.	9	Melbourne,	400	5,778	Barcelona,	40		Rotterdam,	1 pk.	5 dms.
Paint—			Montreal,	145 t.		Boston,	300	392 cks.	Anthracene—		
Antwerp,	18 cks.		New York,	44	13	B. Ayres,		50 brls.	Rotterdam,	42 cks.	
Bordeaux,		2 bxs.	Noqui,	265		Gibraltar,		30	Bichrome—		
Calcutta,	160 kgs.	80 dms.	Para,	35	14	Montreal,		334	Rio de Janeiro,	1 ck.	
Aldera,	51		Rio de Janeiro,	2		New York,		560	Bleaching Powder—		
Callao,		35 cs.	Rotterdam,	260		Philadelphia,		67	Rio de Janeiro,	10 cs.	
Constantinople,	4 cks.		Sydney,	50		Pt. Natal,	20	60	Bone Waste—		
Curacao,	25 kgs.		Trinidad,	33	5	Seville,			Antwerp,	60 bgs.	
Demerara,	40		Valparaiso,	200	11 pns.	Soda Oxide—			Treport,	60 brls.	
Genoa,	24	1	Salt Cake—			Leghorn,		5 cs.	Caustic Soda—		
Gibraltar,	304		Gijon,	55 t.	16 c.	Sodium—			Rio de Janeiro,	10 dms.	
Hamburg,	46		New York,	4	10	Bombay,		32 brls.	Chemicals (otherwise undescr.)		
Havana,	2		Saltpetre—			Sydney,		5 cks.	Rotterdam,	7 cks.	33 kgs.
Havre,	16		Maranham,		5 c.	Sodium Bicarbonate—			Copper Sulphate—		
Honolulu,	7				3 q.	Antwerp,	40 kgs.	21 cks.	Rio de Janeiro,	1 ck.	
Lisbon,		45	Sheep Dip—			Auckland,		27 brls.	Copperas—		
Maracaibo,	80 kgs.		Natal,	135 dms.	£35	Barcelona,	80		Rio de Janeiro,	1 ck.	
Montreal,	4 cks.		B. Ayres,	18 t.	500	Calcutta,	750		Cottonseed Oil—		
Opobo,	21 kgs.		Calcutta,		20	Catania,	30		Tunis,	110 brls.	
Para,	23 cks.	10	Soap—			Cienfuegos,	12		Creosote—		
Ponce,	38 kgs.	15 frks.	Accra,	200 bxs.	6 cs.	Constantinople,	20		Treport,	30 cks.	
Porto Alegre,			Alexandria,	661	6 bdl.	Copenhagen,	15 pks.	10	Extracts—		
Smyrna,	100		Algao Bay,	50		Delagoa Bay,	20 kgs.		Rotterdam,	2 cks.	
Trieste,	12 cks.		Amsterdam,	300		Demerara,	20 kgs.		Rio de Janeiro,	11 bxs.	
Tripoli,	15 kgs.		Axim,	20		E. London,	10		Linseed Oil—		
Valparaiso,	16	42	Bahia,	20		Genoa,	110		Susa,	4 brls.	
Painters Colours—			Barbadoes,	200		Hong Kong,	54		Tunis,	6	3 dms.
Acajutla,	14 cks.		Bombay,	460		Kobe,	100		Bagdad,		100
Alexandria,	71 pks.		Brisbane,	20		Leghorn,	80	4	Bombay,		
Baltimore,	188 cks.		B. Ayres,			Libau,	180		Mineral White—		
Bahia,		30 brls.	Calcutta,		6 brls.	Lisbon,	80		Rio de Janeiro,	20 bgs.	
Barcelona,	11		Canaria,	520	13 cs.	Malaga,	25 pks.	16 bgs.	Naphtha—		
Bombay,	4 pks.	50 bgs.	C. C. Castle,	155	11	Maracaibo,	200 kgs.		Treport,	50 cks.	
Havana,	3 cks.	3 brls.	Cape Town,	752	12	Marbourne,	200 kgs.		Copenhagen,	100	
La Libertad,	5		Chama,	54		M. Video,	20		Naphthol Salts—		
Las Palmas,		18 kgs.	Colon,	1,180	2	Montreal,	760	15	Rotterdam,	24 kgs.	
Marseilles,			Constantinople,	650	10	Nagasaki,	100	72	Naphthylamine Salts—		
Melbourne,	16		Demerara,	211		Naples,	30		Rotterdam,	31 cks.	
M. Video,		20 cs.	Dixcove,	150		New York,	100		Nitrous Oxide Gas—		
Philadelphia,	3		Durban,	25		Oporto,	20		Copenhagen,	10 brls.	
Trinidad,	18 pks.		E. London,	50	50	Pt. Natal,	20		Paint—		
Paraffin Wax—			Gibraltar,	527		Rangoon,	150		Bagdad,	2 cs.	30 dms.
Alexandria,		10 cs.	Guayaquil,	900		Rouen,	245		Paraffin Wax—		
Fiume,		50	Hamburg,		125	St. Petersburg,	950	12	Hamburg,	10 bls.	
Genoa,	276 bgs.	5	Honolulu,		6	Sodium Bichromate—			Phosphate—		
Leghorn,	55		Karachi,	250		Rouen,		21 cks.	Antwerp,	2 cks.	
Trieste,	10		Lagos,	156		Sodium Carbonate—			Pitch—		
Venice,	32		Las Palmas,	180		New York,		56 brls.	Antwerp,	3,315 c.	
Phosphorus—			Malta,		11	Sodium Chlorate—			Cette,	407 f.	
M. Video,		5 c.	Manila,	6		Antwerp,		5 kgs.	Potassium Bicarbonate—		
Hiogo,	6 t.	1,455	Montreal,		1,100	Boston,		100	Rio de Janeiro,	1 ck.	
Shanghai,	10	160	Newcastle,	30		Hamburg,		4 cks.	Pyridine—		
Yokohama,	5	65	New York,	50	53	Santos,		1	Rotterdam,	15 cks.	
Kobe,	5	65	Palma,	300		Sodium Silicate—			Soap—		
Potassium Bichromate—			Piraeus,	150	1	Malta,	10 cks.	5 brls.	Hamburg,	2 pns.	
Smyrna,	5 t.	6 c.	Pt. Natal,	290	32	Oporto,		9	Sodium Bica' bonate—		
Vera Cruz,	8	2	Rangoon,	715		Philadelphia,			Abo,	20 cks.	
Potassium Carbonate—			Rotterdam,	715		Rouen,	15		Tunis,	40 kgs.	
Melbourne,	14 c.	£15	St. John's, N. Id.,	86		Sulphur—			Sodium Hyposulphate—		
Potassium Chlorate—			St. Kitts,	75		Bahia,	1 t.	2 c.	Tunis,	1 ck.	
Shanghai,	8	10 c.	Shanghai,	4,411		Pernambuco,	1	14	Tallow—		
Hiogo,	27	10	Sherbro,	20		Demerara,	15	3	Rio de Janeiro,	15 cks.	
Gutujewsky,	102	10	Singapore,	500		Montreal,	31	5	Tar Oil—		
Hamburg,	1	30	Talcahuano,		2	Boston,	125	2	Antwerp,	3 dms.	
New York,	15	480	Taltal,	100		Sulphuric Acid—			Tar Salts—		
Baltimore,	3	5	Teneriffe,	924		Bahia,		3 cs.	Danzig,	25 bgs.	
Kobe,	5	9	Soda—			Superphosphates—		£8	Varnish—		
Yokohama,	5	9	Antwerp,	3,435 bgs.		Hamburg,	122 t.	15 c.	Bagdad,	2 cs.	
Naples,	5	10	Baltimore,	844		Valencia,	100	230			
Rotterdam,	1	15	Bombay,		11 brls.	Barcelona,	60	149			
Potassium Cyanide—			Boston,	1,840	97 tcs. 130 cks.	Teneriffe,	10	2			
Melbourne,	14 c.	£143	Soda Alkali—			Bordeaux,	24	12			
Curacao,	1 t.	50	Genoa,		105 brls.	Nantes,	260	8			
Potassium Prussiate—			Naples,		20						
Genoa,	4 t.	18 c.	Soda Ash—								
Vera Cruz,	1	18	Antwerp,	3,435 bgs.							

HULL.		
ending September 25th.		
Colours—		
3 hmpres.		
Carbonate—		
3,080 c.		
ng Powder—		
75 cks.		
Soda—		
35 dms.		
1 ck.		
ls (otherwise undescribed)		
1 ck.		
10 pks.		
3 5 cs. 12		
18 3,485 slbs.		
12 23		
31		
20 21 100 bgs.		
urg, 1 38		
1 pk.		
11		
4		
12		
21 20		
9 brls.		
4		
rsburg, 16 bgs. 20		
ducts (otherwise undes.)—		
am, 51 brls.		
eed Oil—		
am, 296 c.		
215		
nsand, 33		
gen, 51		
600		
urg, 100		
g, 1,042		
220		
es, 4,837		
am, 346		
312		
lm, 35		
ls (otherwise undescribed)		
oia, 1 ck.		
am, 23		
1 ble.		
rsburg, 75 cs.		
1,200 sks.		
Oil—		
140 c.		
nsand, 52		
nia, 266		
nsund, 18		
tinople, 67		
g, 206		
am, 52		
gen, 17		
lm, 124		
946 bgs.		
3,925		
ol—		
rsburg, 63 bgs.		
s' Colours—		
25 cks.		
am, 18		
125		
7 dms.		
nsand, 10 pks.		
nia, 46 1 cs.		
tinople, 1		
2		
1 dm.		
4		
42		
urg, 2 25 pks.		
am, 9		
lm, 27		
1		
100 cs.		
32 bgs.		
ip—		
rk, 140 cs.		
1 cs.		
am, 120		
tinople, 51		
am, 1 ck. 1		
lm, 19		
50 cs.		
osphates—		
gen, 21 t.		
3,100 bgs.		
urg, 13 cks.		
am, 6		

Tar—		
Antwerp, 25 cks.		
Christiania, 10		
Copenhagen, 9		
Helsingfors, 150 brls.		
Marseilles, 15		
Varnish—		
Rotterdam, 3 cs.		
GLASGOW.		
Week ending September 30th.		
Ammonium Carbonate—		
Riga, 1 t.		
Stockholm, 5 c.		
Bergen, 10		
Stavanger, 5 c.		
Ammonium Sulphate—		
Amsterdam, 9 t. 16 c.		
Demerara, 210 10½		
Bisulphite of Lime—		
Madras, 1 t. 9¼ c.		
Bleaching Powder—		
Calcutta, 4 t. 12¼ c.		
Boracic Acid—		
Brisbane, £49		
Borax—		
Brisbane, £36 14s.		
Melbourne, 37 16		
Hamburg, 77		
Caustic Soda—		
B. Ayres, 9 t. 2¼ c.		
Canada, 14 14½		
Rangoon, 4 5		
Calcutta, 5		
Coal Products—		
Benzol		
Hamburg, 17 t.		
Creosote Oil		
France, £1,390		
Christiania, 17		
Pitch		
Canada, £39		
Danzig, 158 t. 15 c.		
Rotterdam, 11		
Hamburg, 52		
Norrköping, 85		
St. Petersburg, 70		
Ibrail, 997		
Tar		
Christiania, £90		
Danzig, 540		
Hamburg, 11 t. 12 c.		
Riga, 55		
Adelaide, 20		
Rangoon, 106		
Norrköping, 480		
St. Petersburg, 800		
Tar and Pitch		
Calcutta, £236		
Cod Oil—		
Adelaide, £50		
Melbourne, 31		
Cream of Tartar—		
Melbourne, £30		
Extracts—		
Canada, £460		
Christiania, 12		
Victoria, Aus., £41 18s.		
Gelatine—		
Canada, £145		
Glue—		
Stockholm, £34		
Lead Nitrate—		
Rotterdam, £18		
Linseed Oil—		
B. Ayres, 2 t. 8 c.		
Canada, 6 1¼		
Port au Prince, 1 6		
Cape Town, 1 16		
Bodo, 1		
Litharge—		
Stockholm, £27		
Canada, 90		
Magnesium Sulphate—		
Christiania, £29		
Manganese—		
Rotterdam, £11		
Paint—		
B. Ayres, £40		
Madras, qty.		
Yokohama, 45		
Painters' Colours—		
Colombo, £20 19s.		
Cape Town, qty.		
Demerara, 11		
Hong Kong, £40		
Oporto, 42		
Shanghai, 83		
Singapore, 83		

Paraffin Wax—		
Riga,	10 t.	
Skien,		£8
Stockholm,		16
Cape Town,		29
Potash—		
Canada,	qty.	
Potassium Bichromate—		
Antwerp,		£123
Madras,		54
Stockholm,		17
Victoria, Aus.,		166
Hiogo,		100
Potassium Cyanide—		
Melbourne,		£129
Sydney,		162
Townsville,		1,400
Sheep Dip—		
B. Ayres,		£78
Soap—		
Rangoon,	1 t. 15¼ c.	
E. London,	2 12¼	
Singapore,		£29
Sodium Bichromate—		
Antwerp,	1 t. 18¼ c.	
Stannous Chloride—		
Demerara,		£38 10s.
Sulphuric Acid—		
Rangoon,		£6
Tartaric Acid—		
Melbourne,		£40
Treacle—		
Abo,	13 t. 10 c.	
Bergen,	20 14	
Varnish—		
Adelaide,		£28
E. London,		£36 10s.
White Lead—		
E. London,		£23 12s.

TYNE.

Week ending September 25th.

Alkali—		
Christiania,	13 t. 8 c.	
Amsterdam,	24 19	
Copenhagen,	1 2	
Rotterdam,	3 4	
Riga,	8 15	
Gothenburg,	11 4	
Ammonium Chloride—		
Gothenburg,	1 t. 14 c.	
Ammonium Sulphate—		
Lisbon,	15 t. 2 c.	
Antimony—		
Antwerp,	1 t.	
Montreal,	4	
Arsenic—		
Gothenburg,	17 c.	
Barium—		
Hamburg,	7 t. 8 c.	
Barium Carbonate—		
Rouen,	23 t. 14 c.	
Rotterdam,	12 10	
Barium Chloride—		
Montreal,	1 t. 19 c.	
Bleaching Powder—		
Christiania,	2 t. 12 c.	
Amsterdam,	43 18	
Antwerp,	28 6	
Copenhagen,	11	
Horsens,	2 2	
Rotterdam,	35 5	
Gothenburg,	40	
Bergen,	4 19	
Wyburg,	75 3	
Helsingfors,	2	
Lisbon,	15 1	
Castor Oil—		
Antwerp,	4 c.	
Bergen,	14	
Caustic Soda—		
Christiania,	11 t. 14 c.	
Amsterdam,	14 7	
Copenhagen,	26 4	
Antwerp,	11 6	
Hamburg,	5	
Rotterdam,	1 4	
Gothenburg,	9 13	
Bergen,	5 16	
Wyburg,	22 11	
Helsingfors,	3 7	
Genoa,	44 9	
Lisbon,	4 18	
Montreal,	110	
Chemicals (otherwise unscripted)		
Gothenburg,	25 t. 2 c.	
Copperas—		
Wyburg,	1 t. 3 c.	

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Vol. XXI.

Contents.

PAGE	PAGE
ful El Dorado..... 247	Trade Notes..... 247
put in the Rand..... 242	Tar and Ammonia Products..... 248
ent List..... 243	Miscellaneous Chemical Market..... 248
s of Latest Complete Speci-..... 243	The Metal Markets..... 248
as..... 243	Report on Manure Material..... 248
y Promotion in Extremis..... 243	Liverpool Oil and Colour Market..... 248
of Companies..... 244	Hull Paint, Oil, and Colour Report..... 249
Competition and the..... 244	West of Scotland Chemicals..... 249
ical Trade..... 244	Tyne Chemical Report..... 249
ber-Growing Centres..... 245	New Companies..... 249
ik Shelf..... 245	Imports..... 250
of Alkali and Bleach..... 246	Exports..... 252
and Exports for September..... 247	Prices Current..... 256
Mining Explosives..... 247	

A DOUBTFUL EL DORADO.

NO one will doubt the wisdom of the Bard of Avon in declaring that "Thrice armed is he who hath his quarrel just," but sometimes a quarrel or a quibble that is the quintessence of justice and desirability is rendered ridiculous and futile by its Quixotic infeasibility. This is just about the case with our contemporary, the *Medical World*, which has been moralising on the Manchester culvert scheme. Without the veriest trace of editorial mendacity, we can say that on many points we appreciate the attitude of the *Medical World* as a paper, and we regret that on this particular subject we are obliged to fall foul of it in criticising the advance proof which has been thoughtfully sent us. The article has found a place in the columns of many of the daily and evening papers, on which we compliment our contemporary; but for ourselves, having the conviction of our opinions, we cannot modify, on this account, the criticism that the article calls for.

The general tone of the article is to the effect that sewage sludge is a little gold mine, and astonishment is expressed at the fact that "it has occurred to no one to ask what the sludge consists of; to investigate its composition; to see if valuable materials cannot be obtained from it."

This is a statement that is calculated to cause astonishment. With the Klondyke aspect we will deal later, taking the sludge examination first.

We should like to point out that we did all that our contemporary wonders at having been left undone, and even more, seven years ago, and this only of ourselves, to say nothing of the investigations of the host of other workers before then and since.

We ask in all humility is it not self-condemnatory to begin by saying, "We have no data before us of the Manchester system of treatment, or of the quantity of sludge to be disposed of," and then to decry the system as a whole and enlarge on the value of the sludge as a source of profit?

While admitting the *desirability* of our contemporary's remarks, we will point out a few of their absurdities when reduced to the practical sphere. Taking Salford sewage as an example, in 1891 we showed that the ammonia, recovered as sulphate of ammonia, would be worth £11,000. a year, and commented on the fact that despite this there was not a process that could extract it economically. Is this a matter for wonder when it is realised how great are the physical difficulties of the task? It is no light task to recover *economically* 0.75 ton of ammonia from 50,000 tons of water per day; yet this is what recovering the £11,000. worth of ammonium sulphate from the Salford sewage involves in plain, hard facts. Although at that time we showed a method of using sludge at a profit for cement making, yet after learning by practical experience the amount of ammonia that could be recovered from the sewage and sludge, it was necessary to reduce the theoretical yield from 20 tons of ammonium sul-

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phate a week to 6. Even the more rational method of making cement, which was at least a practical possibility, has yet to be tried on the manufacturing scale.

Our contemporary then descants on the advantages of a certain sewage drying plant and a hot air furnace. No doubt both are good in their way, and may do well at Bremen; but does Bremen have to face the treatment of 26,000,000 gallons of sewage *per day* like Manchester? Apart from the initial cost—which will be great by the culvert or any other scheme—there is the question of working expenses and up-keep. These two items will be trifling with the culvert; what would Bremen do with Manchester's 9,490,000,000 gallons a year?

Our contemporary airily waives these points, and the mechanical difficulties of extending this drying process to the needs of Manchester by flatteringly suggesting that the adaptation of the process "presents no difficulties which . . . the many capable men of science which Manchester can boast, could not readily overcome." We are pretty certain, however, that after reading the facts we have just given, there are few who will find much consolation in this soft-soaping.

In criticising the Manchester system of treatment, special objection is taken to the filter-pressing of the sludge. "So doing squeezes valuable matters out from the sludge." This is rather contradictory. It is the *sludge* our contemporary considers so valuable. The liquid portion of the sewage only represents so much mother-liquor; by removing the last portions of this mother-liquor from the sludge, in a filter-press, the sludge must be concentrated, not weakened. You only squeeze out the liquid sewage effluent, entangled in the sludge, and this is so dilute that the "valuable matters" in the filter-press drainings must be infinitesimal.

It is quite true that "sludge contains the lime and other substances used for precipitating it," but as to their being "easily recoverable," there is—well, a doubt. The sludge contains the organic matters precipitated from the sewage, and these have to be disposed of first. Even this is not any too easy, if no nuisance is to be created; and it does not follow that the precipitants after being combined with these organic matters are left in a fit state for re-use.

London is arraigned for its expenditure on lime and copperas, because with our contemporary's pet drying system "the precipitants would be in the furnace ash, and could be used again and again for fresh sewage precipitation."

Now how does this compare with the facts of the case? During the combustion of the organic matters in the sludge the inevitable formation of carbonic acid gas will convert the lime into carbonate, in which form it is practically worthless as a precipitant. Supposing even that the ignition is carried to a temperature equal to that in a lime kiln, and the carbonate of lime is reduced again to the oxide; then, the ferrous sulphate will inevitably have been converted into ferric oxide. How will it be reduced to the ferrous state again? Even if used in the ferric state, every chemist knows the great difficulty of dissolving strongly ignited ferric oxide in acid, and it is no good *per se*.

We do not think "vendors of chemicals" count for much in this matter, but we do think that ratepayers would sooner buy constant supplies of lime and copperas, which are cheap, than endeavour to recover, and render fit, the compounds in the ignited sludge. The cost of a sewage works is enough, but to bear the burden of a chemical works as well is rather too large an order.

The only thing that remains to be said is that, if sewage can be profitably handled in the way our contemporary sug-

gests, there is no need to advise corporations on the value of sludge. The only thing to be done is to form a company and offer to take it. There would be no need to pay for it. In fact, we have no hesitation in saying that almost any Corporation would give the land on which to put down the plant, and build a sludge culvert from the precipitation tanks into the works, on condition that the cost of the latter was paid back in a few years in "recovered" precipitants. What more could a company want? Well, we think they would want working capital for a long time, and after getting that, the capitalists would be wanting dividends for a still longer time. We only wish it were otherwise.

We still think, and in this agree with the *Medical World*, that sewage sludge is worthy of attention as a raw material that can be utilized, but not in the way our contemporary has outlined.

In conclusion, we have only to say that we make the above remarks not as directed against the paper, but only against the too optimistic tone of the article, which in its "undiluted" state is misleading. To leave it "undiluted" would be to perjure our reputation for outspoken criticism, and (to the best of our judgment) the advocacy of a policy of sound science and honesty. Remembering that "he harms me most who lavishly commends," we trust the *Medical World* will accept the spirit of the criticism and pardon the instance.

GOLD OUTPUT IN THE RAND. A RECORD MONTH.

THE output from the Rand district during September, as cabled by the Witwatersrand Chamber of Mines, amounts to 212,564 ozs. This total, however, is exclusive of the returns of several companies which, under the title of the "Association of Mines of the South African Republic," give their joint output as 49,586 ozs. The month's production is, therefore, 262,150 ozs., and shows an increase of 2,547 ozs. as compared with the previous total, and an increase of 59,589 ozs. as compared with the corresponding month of 1896. The following table gives the monthly returns since the beginning of 1894:—

	1894. oz.	1895. oz.	1896. oz.	1897. oz.
January	149,814	177,463	148,178	209,832
February ...	151,870	169,295	167,018	211,000
March	165,372	184,945	173,952	232,067
April	168,745	186,323	176,707	235,698
May	169,773	194,580	195,008	248,305
June	168,162	200,941	193,640	251,529
July	167,953	199,453	203,873	242,479
August	174,977	203,573	213,418	259,603
September ..	176,707	194,764	202,561	262,150
October	173,378	192,652	199,889	—
November ..	175,304	195,218	201,113	—
December ..	182,104	178,428	206,517	—
Total ..	2,024,159	2,277,635	2,281,874	2,152,663

TRoublesome ALKALI WASTE.—A correspondent writes to the *Birmingham Post* drawing attention to a nuisance which is causing inconvenience to the people residing in the neighbourhood of Oldbury. He says: I allude to a very offensive odour which is permeating the atmosphere, and which emanates, I understand, from the deposit of chemical refuse in close proximity to the town by the Oldbury Alkali Company. Several persons have given vent to their feelings in the local paper, and their sentiments are endorsed by the people affected; and the notice of the local sanitary authorities, the medical officer, the District Urban Council, and the Oldbury Alkali Company has been drawn to the matter, but, to all appearance, without effect, as the tipping goes on as briskly as ever. It is a matter of regret that no one of the three first-named bodies, who represent the sanitary interests of the people in the district, and who have been apprised of the public feeling, have taken any steps to prevent a continuation of the nuisance, which seems one which should enlist their special notice. It only remains to say that, failing any action being taken for the end desired, the matter becomes one for the immediate attention of the head sanitary authorities in London." Now's the time for the local fireworks display.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

- Apparatus for Treating Water. T. C. Taylor and J. E. Tolson. 22,072. Sep. 27.
 Glycerine from Spent Soap Leys. J. G. Haller. 22,123. Sep. 27.
 Treating Excreta. C. R. Bilange. 22,128. Sep. 27.
 Preparing Carboic Acid. F. Latze. 22,136. Sep. 27.
 Improvements in Soaps. E. T. F. Goodwin. 22,140. Sep. 27.
 Smoke Consuming Furnace. E. Krueger. 22,179. Sep. 28.
 Porous Electrolytic Diaphragms. J. D. Darling and C. L. Harrison. 22,236. Sep. 28.
 Rendering Wood Uninflammable. E. M. Fox. 22,254. Sep. 28.
 Artificial Stone. K. Kunze. 22,271. Sep. 28.
 Stoneware Pipes. E. Smith. 22,334. Sep. 29.
 Tanning Hides. G. Levinstein. 22,361. Sep. 29.
 Bleaching Fabrics. E. Cabiani. 22,450. Sep. 30.
 Apparatus for Drying and Calcining Organic and Inorganic Substances. J. McCulloch. 22,485. Oct. 1.
 Filtering Sewage, Etc. H. F. Hibbert. 22,500. Oct. 1st.
 Rust-preventing Compound for Iron Work. K. E. Skeet. 22,600. Oct. 2.
 Artificial Coal. W. Knowles. 22,601. Oct. 2.
 Manufacture of Paper. E. Sonstadt and J. M. Landon. 22,630. Oct. 2.

ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

These abstracts are specially prepared for the Chemical Trade Journal, and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.

Improvement in Pumping Apparatus for Chlorine Gas and the like. P. Jensen, 77, Chancery-lane, London (communicated by H. Cappelen and D. Cappelen, both of Gjemso Kloster, Skien, Norway). Eng. Pat., 20,423. Sep. 15, 1896.

As regards pattern, the pump is of the customary type, but the construction is somewhat different from the usual. The cylinder is of cast-iron lined with lead, in which a hollow wooden plunger works. The valve-casings are of lead and the spindle valves themselves are made of wood. The stuffing-box for the plunger is lined with wood, and a wooden washer is used on the gland. There is one drawing.

Improvements in Metal Hampers or Baskets for Carboys. W. H. Strype and J. A. Mason, 47, Tower Buildings, Liverpool. Eng. Pat., 22,109. Oct. 6 1896.

The familiar iron hamper in which the carboy sits is enclosed in a square framing made up of four corner uprights and tie-bands that are rivetted to the posts, and the ribs of the inner hamper. The advantages claimed are convenience in handling, convenience and safety for packing in tiers, the outer framing preventing the rim of one hamper sitting on the neck or shoulder of the carboy in the hamper below. For the details of construction see the three figures that accompany the specification.

Improved Method of and Apparatus for Concentrating Sulphuric Acid. M. Schwab, 96, Deansgate, Manchester. Eng. Pat., 22,512. Oct. 10, 1896.

This apparatus is of the stepped type. Two separate flues are provided for the furnace gases and the fumes from the evaporating pans. The latter are of acid-resisting material. They are shallow, with sloping bottoms that rise from the back vertical side, to the top of the opposite side, whence the acid overflows into the pan below. The overflow edge is curled to assist the discharge of the acid, but the other edges of the pans are curved inwards to prevent the acid escaping. Baffle or louvre plates are provided on the sides for the same purpose. The pans sit on iron plates that form the top of the furnace flue, these in turn being supported by brackets built into the side walls. Through the furnace flue a superheating pipe runs, which supplies hot air to the flue that carries off the fumes from the distillation. The furnace is placed at the lowest end of the "run," so that the hottest gases immediately strike the pans containing the strongest acid. The fume or condensing flue is covered in by moveable stone or fireclay slabs. The acid feed is the same as usual. There are two drawings.

Improvements in the Manufacture of Bleaching Compounds. J. W. Chenhall, Dart Villas, Totnes, Devon. Eng. Pat., 22,792. Oct. 14, 1896.

Chlorine gas is passed into a cold solution of carbonate of soda (1 to 8 of water), or else bicarbonate, or caustic soda. The corresponding potash compounds can of course be used. The saturated solution is then run into an agitator and fine carbonate of soda (or bicarbonate)

added until the solution thickens to the consistency of dough. On standing the mass will harden. When caustic is used powdered carbonate is added after saturating with chlorine and not ground caustic. The solid bleaching compounds thus formed are convenient both in transport and use.

Improvements in the Treatment of Nickel Ores for Extraction of the Nickel, and the Production of Iron Oxide Pigment. Thos. Storer, Sauchiehall-street, Glasgow. Eng. Pat., 22,721. Oct. 13, 1896.

The process is particularly suited to the treatment of New Caledonian ores. After being finely ground, the ore is treated in a closed vessel with a solution of ferric chloride at a temperature of 370° F. for five to eight hours. The solution of nickel chloride is then run off, any traces of ferrous salt thrown down with chalk, and the nickel recovered in any suitable way. The insoluble ferric oxide is washed, and forms a red pigment. Ores containing 5 to 8 per cent. of nickel require about 1,700 lbs. of ferric chloride to the ton. The temperature varies according to the strength of the ferric chloride solution and the desired tint of the pigment.

Manufacture of Manure from Waste Leather and Phosphate of Lime. W. E. Rowlands, of Currie, Rowlands & Co., Seacombe, Cheshire. Eng. Pat., 17,926. July 30, 1897.

The waste leather is moistened and allowed to ferment. Five parts of fermented leather are then mixed with eight parts of phosphate of lime, and the compound treated with enough vitriol to decompose the phosphate. The whole is thoroughly mixed in a mechanical mixer. Salts of potash or ferrous sulphate, etc., may be used if desirable.

COMPANY PROMOTION IN EXTREMIS.

A HINT TO INVESTORS.

WHEN a scheme which a man of ordinary intelligence and energy could work with a £10. note as capital is offered to the public at the price of £10,000., one may be forgiven for coming to the conclusion that the evolution of this class of joint-stock enterprise could not well be carried further. This is the case with the Everlasting Blotter and Advertising Company, Limited, which, with a capital of £10,000., proposes to sell to the public, and make a profit by doing so, what the public can obtain in any quantity for nothing.

The Everlasting Blotters, we learn, are made in "all sizes and shapes," and "the price at which blotters can be retailed (from one penny upwards) ensures an enormous demand from the public." That there is an enormous demand from the public for blotters or blotting paper must be admitted; but seeing that every insurance company and hundreds of other companies make an annual practice of distributing thousands upon thousands of blotting books absolutely free and broadcast through the country, it is not easy to understand where the potential profit of this new company comes in. A consideration of this fact knocks the bottom completely out of the one press testimonial in the prospectus, where a point is made of the probable presence of the blotters in the writing and commercial rooms of hotels. If there is one place to which blotting-books are sent in shoals free, it is to an hotel. The profits of hotel proprietors in this country are not so large that they are likely to purchase from the Everlasting Blotter and Advertising Company, Limited, what any insurance company will be glad to let them have gratis.

The anticipations of the vendor of the Blotter are very large and ample. The prospectus estimates that the profits will admit of a dividend of 15 per cent. on the ordinary shares and 75 per cent. on the founders' shares; but the vendor has guaranteed a minimum dividend of 25 per cent. on the founders' shares for the first year's working, and will deposit with the company a sufficient sum in cash to secure such dividend and the proportionate dividend on the ordinary shares in full. Now, the proportionate dividend on the ordinary shares is 5 per cent., and the amount of the deposit on the present issue will therefore be £200. to secure the dividend on the ordinary shares and £250. to secure the dividend on the founders' shares, or £450. in all—a transaction which the vendor, if he gets his £8,000. for the patent, could very well indeed afford to carry out.

But the whole thing is really beneath serious criticism. If we are to have an everlasting blotter capitalised at £10,000., why not a flypaper and a curlpaper at the same figure? In fact, the field for enterprises of this kind is almost illimitable. The Unfailing Flea Powder Company, Limited, the Saturn and Neptune Bootlace Company, Limited, the World's Great Tin-Tack Company, Limited, and other undertakings for the supply of the smallest domestic necessities, may well be expected to appear if any measure of success whatever attends such an appeal to the investing public as that which has been made by the Everlasting Blotter and Advertising Company, Limited. The hope of the promoters of such enterprises lies in the comparative smallness of the capital, which they imagine secures them immunity from unwelcome criticism. This, at all events, will not be the case with the Everlasting Blotter and Advertising Company, Limited.—*Financial News.*

Reports of Companies.

SAN PABLO NITRATE CO. LTD.

The ninth annual general meeting was held this week at Winchester House. Mr. Robert Harvey, who presided, said he was sorry that, for the second year in succession, they were meeting the shareholders without declaring any dividend. As a result of the working of the past 12 months a credit balance with a profit and loss account had been added to the sum of £770. brought forward from the previous year, making a total of £1,374., which the directors recommended should be carried forward. Considering the adverse circumstances of both limitation of output and of ruling prices, the result was as satisfactory as might have been expected. Although they were successful in making sales of a portion of the company's quota for 1896, the balance could not be sold at a profit, and on account of the continued depression in the nitrate industry the directors decided last July to stop manufacture. Since then the expenses had been reduced to a very small sum. The stocks of nitrate and *caliche* had been carried forward in the balance sheet at a lower price than they cost, in view of the present condition of the market.

THE FALL IN NITRATE.

At that time last year the price of nitrate was 5s. 11d. per quintal, but it had subsequently fallen to 4s. 11d., at which figure it did not pay this company to continue working. There were certain people who could manufacture nitrate at that abnormally low price, but he believed they would not do so for long.

NITRATE AND IODINE STOCKS.

Their stock of iodine was a satisfactory one, and they received every month a good amount from the iodine combination. So far as he could judge they would make enough profit out of the iodine to meet the expenditure in connexion with their *officers*. The directors were still working for nothing, and the office expenses had been largely cut down. In conclusion, he moved the adoption of the report. Mr. J. J. Smith seconded the motion, which was agreed to after a short discussion.

RIO TINTO COMPANY, LTD.

The directors, in an interim report upon the company's operations during the current year state:—"The deliveries of pyrites under existing contracts continue to be satisfactory, and are at about the same rate as during last year. The production of copper in precipitate and regulus at the mines continues without interruption, and the manufacture of refined copper at Cwmavon shows an increase over last year. The enhanced price of copper during the year has produced a corresponding increase in the company's profits, while the economical working of every department has been maintained. The directors have now to declare, out of the estimated year's profits, a half-year's dividend of 2s. 6d. per share on the five per cent. preference shares and an interim dividend of £1. per share on the ordinary shares, both free of income tax, and payable on November 1. The share transfer books will be closed from Saturday, the 23rd inst. to Saturday, the 30th inst., both days inclusive."

BRITISH NON-FLAMMABLE WOOD CO., LTD.

The statutory general meeting of the British Non-Flammable Wood Company, Limited, was held on Monday at Westminster Palace Hotel, S.W., under the presidency of Mr. E. Marshall-Fox. The chairman said he had to report that some considerable progress had been made since the incorporation of the company last June. The company was now engaged in putting up its first works in London. They had acquired a site of some 3½ acres at Fulham, and the machinery for the plant being capable of treating some 100,000ft. of timber per week was practically all finished. Some reports had appeared in the newspapers to the effect that the Government of the United States, which has adopted this process for the treatment of the wood entering into its battleships, has, after some three years' trial, found the same to be defective. As that was somewhat of a serious matter, the board instantly took steps to get at the exact facts, in addition to calling upon the vendor for the fullest and most thorough information upon this point. They also commissioned the eminent naval architect, Professor Byles, of the Glasgow University, to make a thorough investigation of these reports, and to advise the board as to what he found. That gentleman had reported that the objections that had been raised were trivial, and, even if sustained, the fact remained that the wood was fireproof, and that he had seen nothing to convince him that anything said against the wood could be considered as endangering its position as a material for general adoption. While waiting the completion of their Fulham plant the directors had been engaged in investigating the utilisation of their process to other things than wood, and they had made very considerable progress

in this direction. They had gone so far that they had already received their first order from the Haymarket Theatre to treat all the scenery of a new play—shortly to come out at that theatre—and they had every reason to think that the other theatres would follow quickly. They made canvas so that it was impossible for it to burn, and the treatment did not affect the painting. They had also received very important orders for electric casings, and they had likewise received a very considerable order from the Arsenal. The directors had been in communication for a long time with Messrs. E. K. Lucas, the well-known contractors, and they had practically determined upon the erection of a plant at Messrs. Lucas Brothers' works at Lowestoft. The first subsidiary company was actually floated, and was called the Barrow-in-Furness Non-Flammable Wood Company. Its capitalisation was £45,000., and the company had a large block of shares in that company.—On the motion of Mr. Dicey, seconded by Mr. Williams, a vote of thanks was given to the chairman and directors.

DIVIDEND.

PACIFIC BORAX AND REDWOOD'S CHEMICAL WORKS.—An interim distribution at the rate of 6 per cent. per annum for the past half-year is announced. The transfer books are closed from the 11th to the 16th inst. for the payment of the dividend.

FOREIGN COMPETITION AND THE CHEMICAL TRADE.

A PLEA FOR SCIENTIFIC LABORATORIES.

A BLUE-BOOK published recently, containing the report of the President of Queen's College, Cork, mentions the fact, as affecting Lancashire particularly, that Germany continues to pay vast attention to the advancement of science, more particularly in the matter of chemistry. The report proceeds: "There is no better way of observing the progress of science in the nineteenth century than by following the growth of chemical laboratories. The first one was established in 1825 by Liebig in the small University of Giessen. He had at that time only nine students attending his lectures. This example was followed by Bunsen in Marburg in 1840, by Wöhler in Göttingen in 1842, and by Erdmann in Leipzig in 1843. Breslau, Greifswald, Heidelberg, and Königsberg towards the middle of the century took up the tale. Since 1825 laboratories have been established everywhere. There is a splendid chemical workshop in Geneva, and there are some very fine laboratories in France, Russia, England, and most of all in the United States, but no country has paid so much attention as Germany to their construction from the point of view of the advancement of science. No State in Germany has spared either labour or expense in this matter, or, indeed, has ever hesitated to supply any educational want, and within the last few years new buildings on the most perfect plan have been built in Freiburg, Tübingen, Giessen, Göttingen, Heidelberg, Kiel, Königsberg, Greifswald, Halle, Munich, Erlangen, Leipzig, and Jena. M. Berthelot, in his work, 'Science et Philosophie,' points out that in one year the Kingdom of Prussia alone spent over £300,000. in providing suitable buildings for chemical research, and Dr. Wichelhaus in an excellent little pamphlet called 'Wirtschaftliche Bedeutung Chemischer Arbeit,' shows the enormous benefit this expenditure has been to German industry and trade. Germany exports now in very large quantities numerous articles of commerce which a few years ago she had to purchase from other countries. She used, for instance, to obtain her potash from Russia and America, soda from England, saltpetre and sugar also from beyond the sea, and colouring stuffs from various countries of the south. A complete revolution has taken place in these trades, because the German chemists in their laboratories have discovered new methods for the treatment of these products so universally required. Wichelhaus calculates that in the sugar trade alone the gain to Germany through her chemical work is about ten millions sterling a year (200 mil. m.) A similar tale may be told of the influence of chemistry on other trade. Seventeen years ago Germany imported a large quantity of soda. At the present moment she not merely supplies soda for her own consumption; her export trade in this article is steadily increasing in volume. Her textile industry is also growing with astonishing rapidity, owing to the promptitude with which recent chemical discoveries have been applied to it. Chemical science also greatly altered the conditions of the distilling and brewing business. The German brewers, by attention to it, have derived enormous profits, and the German export trade in beer, particularly with the East, which did not exist at all a few years since, is now assuming astounding proportions. The establishment of scientifically constructed and scientifically worked chemical laboratories in Ireland, in which young men should be taught to investigate scientific problems and not merely drilled for examinations, could not fail to bring about results similar to those science has produced elsewhere."

INDIARUBBER-GROWING CENTRES.

people not connected with the rubber trade and ignorant of any seem to have an idea that all varieties of indiarubber are alike—that they are the produce of much about the same. The slightly varying species are equally productive of milk, and prepared in the same way, or nearly so, and all equally good. Further, many much better informed people—men with acquiring a rubber property and forming a big company to appear to think that if rubber may be cultivated profitably in one country, it may in any other, provided a rubber tree grows there. The tree they have in their mind's eye, as all the different genera, is the big-leaved, commonly branch-old by the nurserymen, and familiar in the windows of the resident. This tree (*Ficus elastica*) certainly does yield india-rubber of very excellent quality; but the percentage of *Ficus elastica* is 100,000,000 lbs. or more which the world is consuming small. With a prospectus going the round in the City, in estimated profits from rubber cultivation are, or were, based on 1,000 trees to the acre, whereas experiments conducted by the Government have shown that 14 trees per acre of the genus named *Hevea* are too many; with West African rubber properties the public for huge sums based upon the profits obtainable from collection in Brazil, or cultivation in Mexico, it is high little light should be turned upon the subject, not only for the sake of would-be investors, but to relieve the minds of those who ought shares in rubber-growing companies, and, owing in a recent West African fiasco, are inclined to fear that they are desperately bad bargains.

BOLIVIA AND PARA.

Two valuable rubbers are Bolivian and Para. Both have increased in value, and for four years have steadily and almost equally increased in value. They are practically the same thing, and of various species of *Hevea*, and of an allied genus, *Castilloa*.

Para is imported from Brazil and Bolivian from the country which takes its name. Almost the sole difference consists in the Para being generally drier than Para from its having travelled a longer distance. For this reason it often commands a penny or so per lb. Of Para rubber there are three qualities—Para Fine, Para, and Negrohead. Negrohead is merely the inside of the blocks of Para, sometimes cut out because more humid than the outside. Negrohead is a rubber made from the overflows of the cups of trees to receive the milk, or from milk which, oozing from the cups, has run down beside the cups and congealed on the bark. Practically no plantations of *Hevea* in Brazil, the home of the rubber, and there is no need of them. Occasionally rumours reach of planting on a small scale; but the idea is farcical. The rubber thrives best in their natural state, growing on land that is only six months, more or less, in the year, when, of course, they can be approached except in boats. Every attempt to cultivate *Hevea* commercially in other countries has failed so far. In Ceylon it arrived amazingly to all appearance, but when tapped the yield was only about 25% of that obtained in Brazil. These trees planted in Brazil, because on the Amazon and its myriad tributaries are millions upon millions that have never yet been killed by over-tapping, it is true, but they drop in the ocean compared with those that remain. Yet Para rubber rises steadily, and there is grave danger of a distant date.

It is attributable to want of enterprise and labour—but mostly to capital. For the last there is a fine field in Brazil, not in rubber, but in collecting it and trading. The ordinary custom is for the owner to obtain squatter's rights over an area of land, and then to go from a distance to cut paths from tree to tree and collect the rubber.

The paths (estradas) generally comprise 100 trees each. The paths are cut, or are being cut, the property is called a *plantation*, which is often erroneously translated "plantation." Very few of the so-called owners any titles to their "seringaes," and it is very difficult to obtain. Should an owner engage a man to lay in supplies to last his small army six months or more; he must engage steamers to convey them from their base of operations, often 1,000 miles and sometimes 2,000; must shelter them—in short, the employer of 500 men must be a capitalist, and in Brazil large capitalists are none too plentiful.

The supply of Para and Bolivian rubber fails to keep pace with demand. Yet the prospects of profits are sufficiently alluring to exist in numbers almost beyond conception. Forty-eight years ago said on good authority to have been counted on measured ground one square mile. The yield per tree varies from 10 to 30 lb., according to age, size, and situation. On virgin land a tree is a fair average for *seringaes* of big trees; on land that has been worked some years the average is from 5 lb. to 10 lb. to the number of consecutive years in which the trees

have been tapped. The profit, owing to the low rate of exchange and the truck system of payment, which is a necessity, is very great. It is commonly understood that to-day, with fine Para at 3s. 8d. to 3s. 9d. per lb., the net profit, with the middleman eliminated, averages 2s. 3d. per lb.

Labour is scarce, but those who have most money commonly have most men, and it should not be impossible for a wealthy corporation to import labour from Japan, China, or the Malay Seas. The climate on the *seringaes* is dangerous to Europeans as a rule, but there is no absolute necessity for them to dwell on the *seringaes*. The native collectors are only there during the dry season. A considerable percentage never return to their homes; but the mortality among them is quite as much due to the bad foodstuffs they consume and the quantity of rum they drink as to the nature of their occupation. A remedy for the excessive mortality should not be difficult to find. It must be understood that the above observations, particularly as regards profit, relate only to the collection of *Hevea* rubber on the Amazon River and its thousands of feeders, which have their rise in Brazil, Ecuador, Peru, and Bolivia, but mostly in Brazil.

The best rubber tree for cultivation, as distinct from the collection of rubber from trees in their natural state, is undoubtedly the *Castilloa elastica* of Mexico, British and Spanish Honduras, Guatemala, Nicaragua, Costa Rica, the Isthmus, and part of the United States of Colombia. The *Castilloa* is a totally different tree from the *Heveas*, and belongs to the same botanical order as the bread-fruit, whereas the *Heveas* belong to the Spurgeae. The two trees have no characteristics in common, except that both yield india-rubber. The chief advantage offered by the *Castilloa* from the planter's point of view is that it will thrive on comparatively dry lands, or even on hills of moderate elevation, and, consequently, under far more favourable conditions for the planter than the *Heveas*. Its yield of milk is nearly, if not quite, as abundant, but its rubber is of about 40 per cent. less value. Properly prepared *Castilloa* rubber is worth from 2s. 3d. to 2s. 6d. per lb., according to condition, while the rubber prepared after native methods realises from 1s. 8d. to 2s. Improved systems of coagulation will in all probability raise the value to 3s. per lb., as compared with the present price of Para, but it is unlikely that it will ever be as valuable as Para, owing to the great difference in the chemical constituents of the milks. In its wild state the *Castilloa* is fast becoming extinct. In Costa Rica it is difficult to find a tree that the rubber collector can "put a knife into," so close is the network of channels in the bark made by previous collectors. Saplings of two years old are tapped regardless of legal restrictions, and except on the few plantations, it is certain that there will soon be no *Castilloas* to tap. On the Mexican plantations and in Guatemala the trees are commonly tapped in their fifth year when they yield from 1½ lb. to 2½ lb. of rubber. In British Honduras the planters wisely leave the trees alone until their eighth or tenth year, when from 3 lb. to 5 lb. may be expected. The annual yield increases until a certain age is reached, and trees fifty years old have been known to give 20 lb. of rubber. The net profit on cultivated *Castilloa* rubber, so prepared as to be worth 2s. 4d. per pound, is from 1s. 4d. to 1s. 8d., according to the cost of labour in the country where it is grown. The margin is amply wide enough for profitable employment of capital. The proper place to commence a plantation of *Castilloa elastica* is where the wild trees are most abundant. Like the *Heveas*, it does not seem to yield well where it is not indigenous. Jamaica and Trinidad have introduced it, and the growth of the trees has been all that could be desired, but the yield of milk is small. The same may be said of the *Castilloa* in the East Indies and elsewhere. It must not be forgotten that even in its home—Mexico and Central America—the yield of the *Castilloa* depends greatly on the situation. A loss must follow any attempt to cultivate it on very poor soils. The richest alluvial lands give the best results.

WEST AFRICA.

West Africa is not, and probably never will be, a favourable field for rubber cultivation. West African rubbers are obtained from various species of *Landolphia*, all climbing plants, from *Ficus Vogelii*, and *Kikxia Africana*. Pending a trial of the last named on the comparatively healthy lands of British Central Africa, a definite opinion cannot safely be expressed with regard to it, but the West Coast is no place for rubber-growers. To ensure anything like success, European supervision is absolutely essential, and that, in the steamy, swampy forests, where the rubber-yielding plants and trees of West Africa appear only to thrive, means death in from three months to two years. Nor is the climate the only drawback. The average value of West African rubber is only 1s. 5½d. per pound; the average net profit on rubber collected by natives in the forests, and sold by them to the coast traders, is under 6d. per pound. The native can find a ready market for his rubber at from 6d. to 1s. or more per pound, according to quality and condition, and he can please himself whether he will go in search of it or remain idle at home; so that it is hopeless to expect that he will work on a plantation, or collect rubber on a concession, for about 1s. a day. A moderate revenue might be earned by a small trading company; but

the private trader with a few thousands behind him would be in equally as good or bad a position. Not long ago the West Coast traders were making a big profit on rubber; but the forests near the coast have been stripped, and now the natives have to travel such great distances, and the rubber they obtain reaches the trader in such a deteriorated condition, that the profit has almost reached vanishing point. In the Congo State, if missionaries may be credited, the natives may be compelled to collect rubber under pain of losing their hands. Until the British Government permits similar methods of coercion, which will not be just yet, there will not be much hope for rubber-growers, or owners of rubber concessions, in the British Colonies on the West Coast of Africa.

INDIA.

The principal rubber tree of India, Burma, and various other parts of the East is the *Ficus elastica* previously alluded to. It has been cultivated on a very extensive scale by the Indian Government in Assam, where promising results have been obtained, the average yield of 50 trees in one year amounting to 26 lb. per tree. The yield fluctuates, but the tree is well worth the planter's attention.

The rubber from Borneo, Sumatra, and the Malay Archipelago, which chiefly reaches us *via* Singapore, is mostly derived from species of *Willughbeia*, climbing plants so closely allied to the *Landolphia*s of West Africa as to be, for all practical purposes, the same things. It is believed that in fairly healthy countries like Borneo, Sumatra, and Java, where land can be obtained for next to nothing, and labour is very cheap, the cultivation of the best of the *Willughbeia*s, *W. firma*, would pay well, notwithstanding that the yield is small—1½ lb. in the sixth year, and the value of the rubber only 1s. 10d. per lb. The average price of Bornean rubber is considerably under 1s. 10d.; but that is a consequence of the native methods. They mix together milks of widely different values and adulterate the mixture with saps that contain no caoutchouc at all. The value of rubber from *Willughbeia firma*, carefully prepared under European supervision, may be safely taken at 2s. 6d. per pound. In their sixth year the *Willughbeia* stems are only about 2 in. in diameter; but they grow to the thickness of a man's body, and the yield increases in proportion.

COLOMBIA.

In the United States of Colombia there are a number of rubber yielders which in all probability it would pay well to cultivate. Many of the *Sapiums* are indigenous, and there is one variety, identified at Kew as *Sapium higlandulosum*, which thrives on the mountains at a considerable altitude, and yields a rubber valued some years ago at 2s. 10d. per pound. Some species of *Hevea* are also found in Colombia, and Cartagena rubber, badly prepared as it is, is well known. Many of the *Sapiums* and a few species of *Hevea* are also found in Venezuela, and in British, Dutch, and French Guiana; but it would appear that, except in Colombia, no attempt has been made at cultivation. There still remain a score or more of rubber-yielding plants and trees to enumerate, but they are scarcely within the scope of this article, as the prospect of their cultivation is very remote. One, however, ought not to be omitted. It is *Manihot Glaziovii*, a native of Brazil, yielding Ceara rubber, which is worth about 2s. 4d. per pound. This tree is wonderfully hardy, and it will thrive on arid lands; but its yielding capacity is very small. The rubber gatherers of Ceara nearly all emigrate to the Amazon, the home of the *Heveas*, which fact speaks for itself.—*Financial News*.

THE POLLUTION OF THE DEE.—An important Local Government Board inquiry was recently held at Chester into the pollution of the Chester Dee. Dr. Bruce Low and Mr. F. H. Tulloch, Local Government Board inspectors, conducted the inquiry, which was attended by counsel and representatives of Cheshire, the Chester Corporation, Shropshire, Flintshire, Denbighshire, and Merionethshire. It was represented that a population of 50,000 persons in and around Chester obtained their drinking water from the Dee, into which Dr. Bruce Low had reported that great quantities of sewage, treated and untreated, were poured. Twelve months ago Chester sought Parliamentary powers to stop the pollution, and was unsuccessful, whereupon the Cheshire City Council moved to obtain the formation of a joint committee to enforce the provisions of the Pollutions Act of 1876 over the whole watershed of the Dee. The only public authorities which joined Cheshire in its application were Flintshire and Chester Corporation; Shropshire, Merionethshire, and Denbighshire being represented as hostile. It was announced that the Chester Waterworks Company had agreed to give in perpetuity a substantial contribution towards the expenses of the joint committee it formed. The Denbighshire County Council, as the leading opponents, characterised the whole proposal as an attempt to saddle the authorities on the Upper Dee with the cost of purifying the Chester water supply for the benefit of a private company, whose plain duty it was to seek a fresh source. Representatives of Merionethshire and Shropshire, and several sanitary bodies, also opposed the scheme as unnecessary, declaring that the powers already in existence were ample. Dr. Bruce Low intimated that they would report to the Local Government Board in due course.

Our Book Shelf.

THIRTY-THIRD ANNUAL REPORT ON ALKALI, &C., WORKS.
Being the report for the year 1896. 118 pp. London: Eyre and Spottiswoode. 1897. 8d.

The report of the Chief Inspector shows that there has been no relaxation in the efforts made to prevent chemical operations causing serious air pollution. There is an increase in the number of works registered, but the number of actual processes under control has declined from 1,520 to 1,505.

It is interesting to note that this reduction is brought about by the following changes since 1895:—Alkali manufacturing processes have diminished by 6; sulphuric acid by 7; chlorine and bleaching powder by 11; sulphur recovery by 4; cement by 2; Venetian red by 2; and arsenic by 7. In the increases we find an advance in chemical manures by 2; salt by 6; alkali waste and tar by 2 each; and fibre-separating by 6.

The activity of the inspectors is shown by the fact that they have made 5,162 visits and 4,775 tests in the year.

The total volume of acid gases escaping keeps much the same. The total for hydrochloric acid is 0.091 grain per cb. ft., compared with 0.083 grain in 1895. The chamber exits have been 1.21 against 1.158 grains. The acidity of all chimney escapes has been 0.803 grain of SO₃ per cb. ft., compared with 0.709 grain in the previous year. The escape from manure works has diminished markedly.

There was one prosecution under the Act, and since the inspectors enjoy an enviable reputation for the courtesy with which they perform their somewhat delicate tasks, it is to be hoped that proceedings on the ground of "obstruction" will be scarcer than ever.

The chief matters of particular interest dealt with in the report are, the Valentiner nitric acid process; the use of oxygen as a restorative; the use of iron oxide in gas purification; and the composition of gas-waters, and other ammoniacal liquors. The contribution on the latter subject is of great interest, and embodies a vast amount of useful research.

In the detailed reports of the individual inspectors, there are several important references to recent methods of vitriol rectification, and their operation.

The report of the Chief Inspector for Scotland shows an improvement in hydrochloric acid and chamber exits, though the chimney exit has risen slightly from 0.61 grain SO₃ per cb. ft. to 0.64.

The improvement in the manure works' exits is even more marked than in the case of England, Ireland, and Wales.

EXPORTS OF ALKALI AND BLEACH.

THE following returns, which are taken from the official foreign and colonial statistics of the United Kingdom, give the amount and value of alkali and bleaching materials shipped to the undermentioned countries for the month of August, 1897, as compared with the same month of 1896:—

ALKALI.				
Port.	1896.	1897.	1896.	1897.
	Cwts.	Cwts.	£	£
Russia	21,746	17,286	5,541	5,273
Sweden and Norway	9,129	12,532	1,843	2,488
Germany	13,728	18,019	3,572	4,304
Holland	7,799	15,876	1,418	2,739
France	4,403	4,260	1,568	1,469
Spain and Canaries	22,278	32,395	7,780	10,603
Italy	18,404	24,099	5,701	7,491
United States	114,091	88,782	29,666	18,251
Australasia	16,884	14,297	4,967	4,587
British North America ..	12,515	11,520	3,501	2,625
Other countries	82,386	137,120	24,300	37,355
Total	323,363	376,186	89,857	97,185

BLEACHING POWDER, ETC.				
Port.	1896.	1897.	1896.	1897.
	Cwts.	Cwts.	£	£
United States	48,111	60,742	16,076	18,415
Other countries	32,882	26,343	11,623	8,506
Total	80,993	87,085	27,699	26,921

CHESTER SALT SHIPMENTS DECLINE.—The shipments of salt from Chester last month were less by 10,000 tons than in the same month of any year during the last decade.

IMPORTS AND EXPORTS FOR SEPTEMBER.

THE Board of Trade returns for the past month are not of a very encouraging nature. The exports are low. In the imports, oils show an increase, notably with olive and cocoa-nut; palm and turps both showing a decline. The exports of alkali and salt are larger but the values are less.

IMPORTS OF FOREIGN AND COLONIAL PRODUCE.

ARTICLES.	Quantities.	
	1896.	1897.
Margarine	Cwt. 82,919	86,668
Copper Ore and Regulus.....	Tons. 16,389	18,370
Pyrites.....	" 56,504	49,518
Tin	Cwt. 67,347	41,876
Alkali	" 10,238	14,438
Brimstone	" 42,804	16,760
Dyes, Coal Tar	£. 59,439	61,374
Saltpetre	Cwt. 24,671	22,063
Petroleum	Gall. 15,393,970	15,470,549
Turpentine	Cwt. 72,187	55,660
Guano.....	Tons. 1,396	3,242
Nitrate of Soda	" 1,093	8,390
Paraffin	" 78,400	60,654
Rosin	Cwt. 108,512	129,731
Tallow and Stearine.....	" 97,281	169,397
Oil Seed Cake	Tons. 19,697	17,141
Wood Pulp.....	" 28,912	26,804

EXPORTS OF BRITISH AND IRISH MANUFACTURES.

ARTICLES.	Quantities.	
	1896.	1897.
Alkali	Cwt. 381,326	388,595
Cement	Tons. 34,898	32,134
Coal and Coke	" 2,914,758	3,197,400
Copper, all kinds	Cwt. 68,326	86,158
Iron and Steel	Tons. 314,736	283,559
Chemical Manures	" 39,556	38,881
Oils, seed	" 5,186	3,417
Salt	" 46,253	46,762

TESTING MINING EXPLOSIVES.

THE following memorandum has been issued by the Home Office, Whitehall, S.W. :-

1. Arrangements have now been completed for testing explosives (at the Home Office Testing Station, Royal Arsenal, Woolwich), with a view to their being admitted to the List of Permitted Explosives, which it is proposed to substitute for the list contained in the Schedule to the above Order. The explosives on the Permitted List at present in force will have to be submitted to the test, and pay the fee accordingly.

2. Any person wishing to have an explosive tested must fill in the accompanying application form and forward it together with a fee of £25. to the Under Secretary of State, Home Office, Whitehall, S.W.

3. Instructions will then be given as to the samples to be sent for testing.

4. The samples will be tested in the order, so far as practicable, in which they are received; and notice of the day and hour of the test will be sent to the applicant, who will on prior application, receive a permit authorising him (by or with a representative named by him) to be present at the test. The test is as follows:

THE TEST.

(a.) No explosives shall be submitted for testing until it has been admitted to the Home Office List of Authorised Explosives.

(b.) The test will be carried out for each explosive with the size of detonator* recommended by the manufacturer or person submitting the explosive, and every shot will be fired electrically.

(c.) All charges to be stemmed with 9 inches of dry clay well rammed.

(d.) Each shot to be fired in the case or wrapper* in which it is proposed to be employed in actual use.

(e.) Each shot to be fired into a highly explosive mixture of coal gas and air, the gas being supplied from the Royal Arsenal gas works.

(f.) The charges of explosives to be fired will be determined as follows:—

(a.) In the case of explosives intended to be fired by a detonator, and commonly called "high explosives," the charge will be taken as the equivalent of 2 oz. of dynamite No. 1, containing 75 per cent. of nitro-glycerine, as determined by the enlargement obtained on firing the same in a lead cylinder tamped with loose sand.†

(b.) In the case of Gunpowder or any explosive not intended to be fired by a detonator, the charge will be taken as the equivalent of 6 oz. of R.F.G.² gunpowder, as determined by the enlargement obtained on firing the same in a lead cylinder tamped with loose sand and heavily weighted above with a mass of metal.

(g.) Each explosive to be subject to the following test:—

A number of shots shall be tried not exceeding 40. If in the first 20 no failure occurs, or in the first 30 only one failure, or in 40 only two failures, it will be passed.

A shot will be regarded as a failure if (1) it ignites the gaseous mixture, or (2) it leaves an appreciable amount of the charge unexploded.

A shot may be repeated at the discretion of the officer in charge of the testing, if in his opinion there is reasonable ground to believe that a failure was due to any cause unconnected with the explosive.

5. All explosives which pass the test will be put on the Permitted List, but in the event of an explosive failing to pass the test, it will be open to the applicant to apply for a further trial, for which a further fee must be paid of £15.

6. In this further trial the Secretary of State reserves a right to make any variation in the conditions of the test which may appear to him to be necessary to meet any special circumstances.

7. The Permitted List is liable to revision from time to time, and explosives on the Permitted List will be liable to occasional retesting.

8. Applications from manufacturers, importers, mine owners, miners, and others interested, will be entertained for the retesting of explosives on payment of a fee of £2. for a minimum of 10 shots. Additional shots to be paid for *pro rata*.

9. If at any time an explosive is found in practical use to have caused explosions, or on examination or retesting to be of bad manufacture or otherwise likely to be dangerous, the Secretary of State reserves to himself the right, after such special inquiry as he may direct, of removing the explosive from the permitted list or of prohibiting its use when made by a particular manufacturer.

10. Facilities will be given for samples to be tested for experimental purposes in connection with the working out of new explosives for use in coal mines, on payment of fees to be determined in each case; but no explosive will be received for firing, even experimentally, which has not previously been placed on the list of authorised explosives issued by the Home Office.

† In cases where an explosive differs much in power from dynamite, the charge fired in the lead cylinder will be varied so as to give an enlargement approximating to that given by dynamite.

Trade Notes.

RUSSIAN PETROLEUM TRADE EXTENSION.—It is reported to the *Weser-Zeitung*, of Bremen, from a well-informed source, that Russian trade circles are seriously considering the question of promoting the petroleum exports to the Far East. There is even talk of a Government subsidy.

THE CASTNER-KELLNER ALKALI COMPANY, LIMITED.—This Company have sold their whole production of bleaching powder to the Deutsche Solvay-Werke Actien Gesellschaft, Bernburg. Messrs. Smith and Hutchinson, the Liverpool agents, have been commissioned to resell part of the production.

FATALITY AT A CHEMICAL WORKS.—A young man named William Whelan, a mixer at a chemical works in Cornbrook, was following his occupation on Monday afternoon when he fell into a tank of hot liquor. He was dreadfully scalded, and died on Tuesday at the Manchester Infirmary, where he was conveyed.

WATER ANALYSIS.—At the last meeting of the St. James's Vestry, it was unanimously referred to Dr. Edmunds, public analyst and medical officer of health for the district, to make periodical analyses of water drawn from the mains of the various companies which supply St. James's, and to report monthly as to the results of such analyses.

Obituary.—We regret to see the announcement of the death of Mr. Thomas Jackson, J.P., of Beech Mount, Clayton, Manchester, at the age of 63. Mr. Jackson had been in business at Clayton as a chemical manufacturer for over 20 years. Six years ago he was made a magistrate of the Salford Hundred. He was also a member of the Chamber of Commerce.

* In the event of the explosive passing the test, it will be permitted for use only with the detonator or detonators and in the case or wrapper with or in which it has been tested. No alteration in the detonator or case can be made without the special sanction of the Secretary of State.

THE WIDNES FOUNDRY CO.—We learn that the Widnes Foundry Co. successfully drove the first pile in the extension of the Queen's pier, Ramsay, Isle of Man, on the 20th ult. There will be 120 piles in all.

THE ELECTRIC PHOSPHORUS PROCESS.—The latest addition to the rapidly growing colony of factories and chemical works in the vicinity of the power canal and tunnel at Echota, near Niagara Falls, is the works for the manufacture of phosphorus by the Allbright process. These works, which will at present require about 300 horse-power, have recently been put in operation.

ACCIDENT AT WARRINGTON GASWORKS.—A terrible accident occurred on Tuesday at Warrington gasworks, whereby two men lost their lives. The lid of a new purifying tank, weighing over twenty tons, was being placed in position when a chain broke, and George Meredith and a man named Fraser, of Huddersfield, were caught between the framework and the lid and killed instantly.

THE NEW LONDON C.C. CHEMIST.—The General Purposes Committee have recommended that Dr. Frank Clowes should be appointed chemist to the Council, in the place of Mr. W. J. Dibdin, resigned. They mentioned that 42 applications had been received for the post, the salary attached to it being £700. a year. On the motion of Mr. Beachcroft, the recommendation was unanimously agreed to. Dr. Clowes was introduced and briefly thanked the Council for his appointment.

CAIRD'S STAMPED STEEL BARRELS.—We have just received from the Iron and Steel Plant Co., Ltd., 10 and 11, Austin Friars, E.C., a booklet of testimonials from firms using the above mentioned barrels. We are pleased to find that our anticipations as to their usefulness are being realised, and that testimony is given to their value for many distinctly chemical purposes. For ether, ammonia, spirits, alumina, syrups, cordials, weed killers, and various alkaline solutions, the barrels have been tried and not found wanting.

NORTHWICH SUBSIDENCES.—At Northwich Petty Sessions, on Tuesday, Alfred Jabez Thompson, salt works proprietor, was summoned by the Salt Compensation Board for failing to pay £139., the amount of the tax under the Brine Pumping Act, which provided for the levying of 3d. per 1,000 gallons of brine pumped as compensation for damage caused by subsidence. The solicitor of the board withdrew the summons, and said that all the levies except those of the Salt Union (who were taking the case to the Queen's Bench) had now been paid.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols keep much the same, 90's being quoted 1s. 11d. to 2s., and 50/90's 2s. Carbolic acids are much the same as usual as regards price. Naphthas are quiet, crude being now quoted at 10d., while solvent remains at 1s. 7d. Anthracene and creosote unaltered. Pitch quiet to dulness at 17s. to 20s. f.o.b. East Coast.

Sulphate of ammonia is temporarily becalmed. Buyers are holding off as much as possible, but the position of sellers is strengthened by the small stocks and firmness in all quarters. Prices for the moment are therefore practically nominal, with Beckton at £7. 15s. to £7. 16s. 3d. London outside makes £8. to £8. 1s. 3d. Liverpool £8. 3s. 9d. Hull £8., and Leith £8. to £8. 1s. 3d.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade business is moderately active and prices are firm generally, both for prompt and forward delivery. Bleaching powder £6. 5s. for spot delivery (o.r. makers' works), and £6. 2s. 6d. to £6. 5s. for forward contracts. Price f.o.b. Liverpool is £6. 10s. to £6. 12s. 6d. in hardwood casks, but rather lower prices on the Tyne. Ammonia alkali is maintained by makers agreement at £3. 17s. 6d., in bags, f.o.r. for home trade. Soda crystals and bicarbonate unaltered. Chlorates quoted, potash 3½d., and soda 4½d. per lb. Caustic soda is slightly easier for spot delivery. Current quotations f.o.b. Liverpool are as follows:—77% £8. 10s., 74% £8. 2s. 6d., 70% £7. 7s. 6d., 60% £6. 7s. 6d. nett, 10 ton lots. Sulphur steady at £4. 10s. f.o.r. Salteake in better inquiry, and firm at 19s. to 20s. per ton. Potash, caustic and carbonate, are in fairly good request, and values are unchanged. Brown acetate of lime is dearer at £5 7s. 6d. to £5. 10s., c.i.f.; grey £7. 15s. per ton. Acetic acid unaltered. Sugar of lead firm, owing to higher price of the metal. Acetate of soda depressed with excessive stock, and selling at £11. per ton. Sulphate of copper steady at £16. 10s. prompt, and forward £16. 15s. to £17.

f.o.b. Aniline oil and salt are lower. Arsenic in fairly good demand, price £21. 10s. per ton. Sulphocyanides quiet. Yellow prussiate of potash firmer at 5½d. per lb. Cyanide 10¾d. per lb. Generally demand for chemicals is without any sign of improvement in the manufacturing districts.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron: Scotch warrants closed at 44s. 9½d.; Middlesbrough, 42s. 3d. cash; and hematite, 47s. 7½d. Copper firm: Chili bars, G.O.B.'s and G.M.B.'s, closed at £48 8s. 9d. to £48. 13s. 9d. cash, and £48 15s. to £48. 16s. 3d. three months. Tin firm: Straits closed at £62. 15s. to £63. cash, and £62 6s. 3d. to £63. 16s. 3d. three months; Australian, £63. 15s.; English ingots, £66. to £66. 10s. Lead dull; Spanish, £13. 10s. to £13. 12s. 6d.; English, £13. 17s. 6d. Silesian spelter, ordinary, £17. 12s. 6d. Nickel, 1s. 2½d. Antimony, £29 10s. Quicksilver: First hands, £6. 15s.; second hands, £6 14s. 6d. *Copper shares* steady: Cape, 2½ to 2½; Copiapo, 1¾ to 2; Libiola, 2½ to 2½; Mason and Barry, 2½ to 3½; Rio Tinto, 24½ to 25½; Tharsis, 6½ to 6½.

GLASGOW, WEDNESDAY.—Market firm, and a small business. Scotch done at 44s. 9d. to 44s. 9½d. cash; and 44s. 11d. to 44s. 11½d. one month; buyers, 44s. 9½d. cash; sellers, 44s. 10d. Cleveland, buyers, 42s. 3d. cash; sellers, ½d. more. Cumberland hematite done at 47s. 8d. cash; buyers, 47s. 7½d. cash; sellers, 47s. 8d. Middlesbrough hematite, buyers, 49s. 3d. cash; sellers, 50s.

REPORT ON MANURE MATERIAL.

The market has been quiet throughout the week, and there is no special feature to comment upon. Demand for high grade phosphates for North Sea and Baltic continues, and quotations for these points are well maintained. We do not hear of any business reported in this grade for the United Kingdom, prices asked being for the present quite above buyers' ideas. For South Carolina and 58/63% Algerian 5d. per unit would be accepted for 1898 shipment; but at this price business would not be practicable for immediate or early shipment. Business has been done in East Indian bone meal to the East Coast at the equivalent of £3. 15s. 6d. per ton, ex ship, and this price would still be accepted, but for Liverpool £3. 17s. 6d. remains the quotation, ex quay. For crushed Kurrachee bones, ex store, £3. 17s. 6d. still required. Nitrate of soda is very quiet at 7s 4½d for fine quality, ex quay. There is good demand for other nitrogenous material at full prices.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm is a steady market, with a moderate business passing, including Accra at £17. 7s. 6d., Benin at £17. 10s., and soft oils at £17. 15s. per ton, all transit. Olive rules strong, and the market is cleared of Seville at £30. 10s., but this quality at Goole offers at £30. to £31. per tun. There is a firmer tone for Liverpool-made linseed in export casks, and the quotation is maintained at 16s. to 17s. per cwt., according to quality. Cottonseed continues quiet, Liverpool refined, in export barrels, being quoted at 16s. to 17s. per cwt. Castor oil is steady and in moderate demand, with good second's Calcutta at 3½d. to 3¾d. per lb. First pressure French 3½d. to 3¾d. per lb. Tallow is quiet, and business slack. Resin is in moderate demand on the spot, and the quotations for all grades are steadily maintained. Spirits of turpentine is still offering at 25s. 6d. per cwt. on spot, with a moderate inquiry experienced thereat. The tone of the market for refined petroleum continues dull at nominally unchanged figures, viz. 5d. for Russian and at 5¾d. to 7d. per gallon for American, according to quality.

CAKES.—A moderate amount of business has been done in American Western linseed on the spot at £6. to £6. 5s. Liverpool makes are firmer, with a fair consumptive inquiry at £7. 2s. 6d. to £7. 15s. per ton, according to brand. The possibility of there being no further shipments of American decorticated cottonseed during this month has caused a firmer tone to rule, but quotations remain at £5. 15s. to £6. 2s. 6d., according to quality. Liverpool makes are the turn in buyers' favour at £6. 5s. to £6. 15s. per ton, with a fair trade thereat. Egyptians at steady quotation being £3. 15s. per ton.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire—common £10., medium £12., best £15.; Derbyshire—common 40s., medium 50s., best 60s.; Welsh—best 90s., seconds 50s., and common 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead: £16. Red lead unchanged. Venetian red: £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7. medium, £10.; finest, £20. Zinc oxide: £22. 10s. to £25.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The situation here can scarcely be described as buoyant. The engineers' strike is becoming apparent in its effects upon the oil trade. This, with continual depressed values upon linseed and cotton oils, on which trade here is most dependent, gives but little prospect to encourage speculation. In linseed there is very little opening; consequently linseed oil is a trifle firmer, the spot value being 13s. 10½d. naked; forward, October-December, 14s. 1½d.; and January-April, 14s. 3d. to 14s. 4½d.; buyers, boiled and refined, £1. to £1. 10s. per ton extra. Cottonseed is weaker, there being one or two cargoes due within a few days; consequently refined cotton oil is dull, and quoted, spot, naked, 13s. 4½d. to 13s. 6d.; forward, November-April, 13s. 4½d. sellers. Filtered refined about £1. extra. Crude is quoted, spot and to April, 12s. 1½d. Ordinary casks, £1. and barrels, £1. 10s. per ton extra. Turpentine is quoted up to 25s. 9d. to 26s., and appears to find a ready market at these quotations. Rape and Colza oils are firm. Olive oils move off slowly at previous quotations, the stock at Goole being ample for present requirements. Castor oil, Hull manufactured, continues to be well supported, from 3½d. to 3¾d. per lb. Cod oils, from 15s. 6d. to 18s. per cwt. Oleines unchanged. Olive oil soaps, from £16. per ton. Stockholm tar, 22s. 6d. per barrel.

CAKES.—Linseed steady at the advance, 95% pure, £7. 7s. 6d. to £7. 10s. per ton. Oilcakes, £6. 7s. 6d. to £6. 10s.; Russians, £6. 17s. 6d. to £7. per ton; Americans, October delivery, £6. 12s. 6d. Cotton cakes quiet: best makes, £4. 3s. 9d. to £4. 5s.; seconds, £4. to £4. 1s. 3d. Rape cakes: None.

PAINTS.—The trade experiences a falling-off in demand. White and red leads firm and unchanged. Ordinary colours in oil, from £9. per ton. Mineral colours, £3. 10s. to £8. Ready mixed paints in tins, from £22. up. Patent dryer, 12s. per cwt. up. Paint remover, 25s. 2d. per cwt. Fine colours in water, from 3d. per lb.; in turps, from 4d. per lb. Imperial black varnish, £5. 10s. per ton in barrels.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

The change in sulphate of ammonia indicated in last month's report has been modified, and the tendency, though still downwards, has been so to only a very small degree. The quotation to-day for prompt is therefore but a shade below that of a week ago, say £8 to £8 2s. 6d. The forward quotation is proportionately stronger, and as makers are pretty firm, little or no business has been passing on that basis. Common chemicals remain satisfactory on the whole, with here and there a line scarce and dearer, as soda crystals for example. Caustic and soda ash are also scarce, but not changed in price. Sulphate of copper is perhaps a trifle easier than it was. In mineral oils and paraffins business is of moderate bulk at late prices. The strongest line in these is that of lubricating oils, after which comes naphtha. An oilworks which has been some years closed, because of the low condition of the products market, is about to resume production as an experiment.

Chief prices current are:—Soda crystals, £2. 12s. 6d. to £2. 15s., nett, Tyne, soda ash, 48/62°, £4. 2s. 6d. to £4. 15s., nett, Tyne; white alkali, 48/52°, £5. to £5. 10s., nett, Tyne; alum in lump, £4. 17s. 6d. to £5. 5s., nett, Glasgow; caustic soda, white, 74° £8. 10s., 70/72° £7. 10s., 60/62° £6. 10s., and cream 60/62° £6. 5s. all nett, Liverpool; bleaching powder, 35/37° £6. 5s. nett, Tyne; saltcake, 19s.; borax English, refined, £14. 15s. and boracic acid, £26, nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s., nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4d. less 5%, any port; nitrate of soda, 7s. 4½d. to 7s. 6d.; sulphate of ammonia, £8. to £8. 2s. 6d. prompt, f.o.b. Leith; sal ammoniac, first and second white, £33. and £31. nett any port; sulphate of copper, £16. 15s. less 5% Liverpool; paraffin scale, hard, 1½d. to 1¾d. per lb., soft, 1½d. per lb.; paraffin wax, 120° semi-refined, 1¾d. to 2d. per lb.; paraffin spirit (naphtha), 6½d. to 7d. per gallon; paraffin oil (burning), No. 1, 5¾d., and crystal, 6d., at Glasgow and other big centres, for Scotch buyers (English sales a shade lower); ditto (lubricating) 86° £4. 15s. to £5. 5s., 88° £5. 15s. to £6. 5s., and 89/89° £6. 10s. to £7. Week's imports of sugar at Greenock were nil.

TYNE CHEMICAL REPORT.

TUESDAY.

In the chemical trade the demand is fairly good, particularly in ash and soda crystals. Caustic soda is quiet at £7. 10s. per ton 70%, and £9. for 76/77%. Sulphur scarce at £5. per ton net.

Bleaching powder, soft, £6. 10s. per ton, nett; hards, £6. 15s. per ton, nett; caustic soda, 70% £7. 10s., and 76/77% £9. per ton;

recovered sulphur, 2 cwt. bags, £5. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. 6d. per ton, nett; do., 52%, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95% crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 10s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham salt firm at 9s. per ton, f.o.b. Tees.

COALS.—There is a rather better demand in the coal trade. Coke is firm at 18s. to 20s. per ton. Household coals are increasing in consumption. Best Northumbrian steam, 8s. 6d. to 8s. 9d. per ton; second qualities, 7s. 6d. to 7s. 9d. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; gas coals steady, 8s. to 8s. 3d. per ton; household coals, 10s. to 11s. per ton; coke, 18s. to 20s. per ton.

New Companies.

Westfield Soap Co., Ltd. CAPITAL £5,000, in £1. shares. This company has been formed to acquire the business carried on as "The Westfield Manufacturing Co.," to enter into a certain agreement, and to carry on the business of soap makers, candle makers, colour, dye, and paint manufacturers, etc. The number of directors is not to be less than 3 nor more than 7; the subscribers are to appoint the first. Qualification 50 shares.

Barrow-in-Furness Non-flammable Wood Co., Ltd.—CAPITAL £45,000, in £1. shares. This company has been formed to adopt an agreement with the British Non-Flammable Wood Co., Ltd., and Vickers, Sons, & Co., Ltd., and to treat timber, wood, and other substances so as to render the same non-flammable. The subscribers to the memorandum of association are:—H. V. Simpson, 15, Auckland-road, Upper Norwood, lieut. R.N.; E. L. Clapson, 1, Albion-street, Greenwich, secretary; O. H. Hennerick, 48, Charlwood-road, Putney, clerk; A. J. Greenop, 15, Victoria-street, S.W., solicitor; E. M. Fox, Hotel Belgrave, Victoria-street, S.W., gentleman; S. C. Martin, 28, Victoria-street, S.W., clerk; J. H. Styles, 2, Windmill Villas, Long Ditton, clerk.

Dee Estates, Ltd.—CAPITAL £425,000, in £1 shares (175,000 pref.). This company has been formed to adopt an agreement with E. T. Hooley, and to acquire, develop, turn to account, work and deal with certain freehold lands in the counties of Chester and Flint. The subscribers to the memorandum of association are:—E. Legge, 37, Manchester-street, W., barrister; P. B. Dobson, St. Pancras Hotel, London, gentleman; J. E. Jameson, M.P., Bush Lane House, E.C.; H. P. King, 36, Savernake-road, S. Hampstead, clerk; W. R. Burton, St. Pancras Hotel, London, secretary; J. Crowther, 25, Somerset Terrace, Dukes'-road, W.C., clerk; G. H. Skelsey, Oxton, Cheshire, gentleman.

Edward's Air Pump Syn., Ltd.—CAPITAL £25,000, in £1. shares. This company has been formed to acquire certain inventions relating to air pumps, to adopt an agreement with F. Edwards, and to carry on the business of machinery manufacturers and dealers, contractors, iron, brass, and metal founders, tool makers, engineers, etc. The subscribers to the memorandum of association are:—F. Edwards, 62, Bishopsgate-street Within, E.C., engineer; C. W. Milne, 63, St. James'-street, S.W., gentleman; J. Munro, Ashville, Streatham, S.W., gentleman; D. B. Morison, Hartlepool, engineer; W. R. Gaff, 3, Crown Court, Old Broad-street, E.C., chartered accountant; A. Watt, 3, Crown Court, Old Broad-street, E.C., chartered accountant, engineer; J. McCrindle, 11, Scarsdale Terrace, Kensington, accountant. Registered office, 3, Crown Court, Old Broad-street, E.C.

Wrapping Machine Syndicate, Ltd.—CAPITAL £7,000, in £1. shares. This company has been formed to acquire and work the patented invention of A. Cook and T. Dewhurst, for an improved apparatus for stamping bars or cakes of soap and other materials, and wrapping them in paper. The subscribers to the memorandum of association are:—W. McCall, 6, Eastcheap, E.C., merchant; A. Cook, 14, St. Mary's Road, Bayswater, electric engineer; J. G. Watson, Crown Court, E.C., agent; R. Burn, 50, Old Broad-street, E.C., insurance broker; A. C. Brown, 50, Old Broad-street, E.C., electrician; D. C. Apperley, 5, Cripplegate Buildings, Wood-street, E.C., merchant; H. Apperley, 12, Chandos-street, Cavendish-square, W., dentist.

IMPORTS OF CHEMICAL PRODUCTS

AT

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending October 2nd.

Acetate of Lead—
France, 10 cks. F. Smith

Acetic Acid—
Holland, 70 pks. F. J. Putz & Co.
" 183 Little & Johnston
" 91 R. W. Greeff & Co.

Acetone—
Germany, 5 brls. Matthews & Luff
Holland, 1 ck. Philipps & Graves
Belgium, 10 W. S. Barber

Arsenic—
Portugal, 51 cks. Coverley & Westray

Asbestos—
Italy, £100 Pickford & Co.
" 213 Imp. Asbestos Co.
Germany, 20 Craven & Co.
Canada, 250 Deering & Robottom

Barium Chloride—
Germany, 22 cks. Petri Bros.

Barytes—
Belgium, 116 cks. O'Hara & Hoar
Holland, 44 Taylor Bros.
Germany, 44 J. L. Lyon & Co.
Belgium, 57 W. Harrison & Co.
Germany, 67 bgs. H. Lambert

Bleaching Powder—
Holland, 135 cks. J. M. Steel & Co.

Bromine—
Germany, 20 cs. A. & M. Zimmermann

Camphor—
Germany, 1 brl. L. & I. D. Jt. Co.

Caoutchouc—
Sydney, 16 c. W. C. Bacon & Co.
Zanzibar, 52 S. Figgis & Co.
Belgium, 41 Prop. Bull. Wf.
" 143 L. & I. D. Jt. Co.
Zanzibar, 195 Hale & Son
" 26 H. & Son
Mauritius, 40 Hammond & Co.
Germany, 50 T. H. Lee
Zanzibar, 35 Wallace Bros.
Belgium, 25 T. H. Lee
Zanzibar, 24 Wainwright, Bros. & Co.
Madagascar, 11 Procter Bros.
" 12 Prop. Bull. Wf.
" 13 Forbes, Forbes & Co.
" 92 L. & I. D. Jt. Co.
" 13 Blythe, Greene & Co.

Castor Oil—
E. Indies, 100 cs. R. G. Hall & Co.
France, 10 brls. F. Boehm
" 10 Snowdon, Son & Co.
Italy, 10 cs. A. Lawing & Co.
" 20 A. & M. Zimmermann
France, 10 brls. Anderson, Weber & Smith

Caustic Potash—
Germany, 14 drs. J. M. Steel & Co.
" 5 cs. Blondeau & Co.
Canada, 74 c. Charles & Fox
France, 30 drs. Petri Bros.

Chemicals (otherwise undescribed)
Germany, £34 Philipps & Graves
" 245 T. H. Lee
" 200 R. W. Greeff & Co.
N. Zealand, 90 L. & I. D. Jt. Co.
Belgium, 8 John Cockerill Line
Germany, 3 Beresford & Co.
" 592 A. & M. Zimmermann
Holland, 30 H. Lorenz
" 28 Typke & King
Belgium, 90 T. Palmer
France, 45 Mory & Co.
Germany, 70 L. & I. D. Jt. Co.
" 20 Burgoyne & Co.
Norway, 45 W. Caudery & Co.
Holland, 12 J. Barber & Co.
Germany, 31 H. Lambert
" 40 Craven & Co.

Citrate of Lime—
Italy, 21 cks. Thames S. T. & L. Co., Ltd.

Coal Tar Dyes (otherwise undes.)—
Belgium, 29 pks. W. Gerson & Co.

Copper Sulphate—
Italy, 26 brls. J. Owen

Cream of Tartar—

France, 4 cks. Blackmore, Leconte
Spain, 3 H. Johnson & Sons
Italy, 18 W. C. Bacon & Co.
" 18 Fellows, Morton & Co.

France, 5 M. Ashby, Ltd.
Canada, 3 S. Hanson, Son & Co.
Holland, 30 kgs. Kirkpatrick & Co.
France, 20 cks. W. C. Bacon & Co.
" 4 B. & F. Wf. Co.

Cryolite—
Denmark, £37 H. Johnson & Sons

Dextrine—
Germany, 50 bgs. Propk, Davis & Co.
" 15 M. D. Co.

Dyestuffs—

Aniline—
Belgium, 2 cs. W. Gerson & Co.

Anthracene—
Belgium, 295 cks. Burt, Boulton & Co.

Argols—
Italy, 18 cks. Thames S. T. & L. Co., Ltd.

Cochineal—
Canaries, 37 bgs. W. M. Smith & Sons

Cutch—
Rangoon, 250 bxs. A. Howden & C.
Singapore, 100 E. Davis & C.

Divi Divi—
Ceylon, 133 bgs. L. & I. D. Jt. Co.

Extracts—
U. States, 2 brls. Rosenberg, Loewe & Co.

France, 9 pks. T. H. Lee
U. States, 20 kgs. W. C. Barnes & Co.
" 100 bxs. Skilbeck & Co.
Canada, 120 cks. Boucher, Mortimore & Co.

Denmark, 15 cs. J. H. Fox & Co.
France, 11 pks. Sorensen & Co.
" 11 pks. Bennett S. S. Co.

Gambier—
Singapore, 243 bls. Beresford & Co.

Indigo—
E. Indies, 4 chts. Parsons & Keith
" 2 J. Karples & Co.
" 13 Park, Macfadyen & Co.
" 10 L. & I. D. Jt. Co.
" 5 Binny & Co.

Myrobolams—
E. Indies, 1,000 pkts. P. & O. Co.

Naphthalene—
Germany, 34 cks. Fleming's Oil & Chemical Co.

Shumac—
Italy, 200 bgs. Colthurst & Hardin

Tannery's Bark—
U. States, 1 t. Arkell & Douglas
Adelaide, 11 Beresford & Co.
Belgium, 17 Leach & Co.
N. Zealand, 4 Von der Meden & Co.

Valonia—
A. Turkey, 15 t. Deering & Robottom

Farina—
Holland, 20 bgs. H. Lorenz
Germany, 100 Vokins & Co.
" 10 J. Barber & Co.
Belgium, 7 John Cockerill Line
Germany, 10 Seaward Bros., Ltd.
Holland, 50 J. Knill & Co.
" 100 R. Bennett & Co.

French Chalk—
France, £20 C. Windschling & Co.

Glucose—
U. States, 125 pks. 786 c. Williams, Torrey & Co.

Germany, 627 1,250 Duche & Sons
" 14 115 J. Knill & Co.
France, 200 200 L. Norman & Co.

" 210 210 H. Fulford
" 310 310 W. E. Cole
Germany, 15 120 M. D. Co.

Glue—
France, £16 Mory & Co.
Germany, 96 Philipps & Graves
Holland, 360 J. Barber & Co.
Belgium, 392
Holland, 270 M. H. Voss
France, 150 T. M. Duche & Sons

Germany, 55 J. Knill & Co.

Infusorial Earth—
Germany, 100 t. A. Haacke & Co.
Melbourne, 144 L. & N. W. Rly.

Lamp Black—
U. States, 252 brls. L. & I. D. Jt. Co.

Lead Acetate—
Germany, 6 cks. Petri Bros.

Lead Nitrate—
Germany, 10 cks. E. J. Diggins

Magnesium Sulphate—
Germany, 258 bgs. Jessop & Co.

Manganese—
Germany, 10 c. Taylor Bros.

Manure—
E. Indies, 15 t. A. Hunter & Co.
Morocco, 4 Fox, Roy, & Co.
Germany, 20 Brach & Rothenstein
E. Indies, 9 Hoare, Wilson, & Co.

Methyl Alcohol—
Germany, 12 dms. Lister & Biggs
" 4 cks. Tingle, Jacobs, & Co.

U. States, 100 T. Jones & Co.
Belgium, 5 dms. W. S. Barber

Mica—
E. Indies, £2220 W. M. Smith & Sons
" 250 E. Flageolet & Co.
" 4,082 Dundee, Perth, & London S. Co.

Molasses—
U. States, 25 pks. 127 c. Ohlenschlager Bros.

Germany, 200 200 J. Barber & Co.
U. States, 475 2,940 Day & Martin
" 100 600 J. Kitchin & Co.

Nitre—
Chili, 13,814 bgs. W. Montgomery & Co.

Ochre—
Spain, 45 brls. R. V. Robinson & Co.

France, 100 cks. Z. Cartwright, Ltd.
Holland, 53 pks. Philipps & Graves
France, 13 cks. J. Flach

Oxalic Acid—
Holland, 15 pks. R. W. Greeff & Co.

Pitch—
N. Russia, 400 brls. Fellows, Morton, & Co.

Ceylon, 100 bgs. Gillespie Bros. & Co.

Plumbago—
Germany, 62 cks. B. Galloway
Ceylon, 73 J. Thredder, Son, & Co.
Italy, 30 bgs. Morison, Pollexfen, & Co.

Potassium Bicarbonate—
Holland, 29 cks. A. & M. Zimmermann

Potassium Carbonate—
Belgium, 120 c. Petri Bros.
Germany, 135

Potassium Permanganate—
Holland, 20 cks. J. M. Steel & Co.

Pumice Stone—
Italy, 12 t. Beck & Pollitzer
" 10 F. Claydon & Co.
" 8 Blundell, Spence, & Co.

Quicksilver—
Italy, 500 btls. L. & I. D. Jt. Co.

Rosin—
France, 100 brls. Perkins & Homer

Saltpetre—
Germany, 14 bgs. L. & I. D. Jt. Co.
" 170 P. Hecker & Co.
" 10 cks.

Germany, 55 R. W. Greeff & Co.
E. Indies, 669 bgs. Perkins & Homer

" 1,731 Lucas & Spencer's Wf.
Germany, 70 cks. S. E. Rly. Co.
" 49 C. Wimble & Co.

Soda—
Belgium, 2,300 c. R. Waters
Holland, 100 R. W. Greeff & Co.

Sodium Prussiate—
Belgium, 36 brls. Blagden, Waugh, & Co.

Starch—

Germany, 1,320 cs. Horne & Co.
" 20 Philipps & Graves
Holland, 1,608 Little & Johnston
Belgium, 230 J. Harrison

" 262 Becker & Wagner
France, 220 Prprs. Dowgate Dk.
Belgium, 414 F. Claydon & Co.
" 80 Leach & Co.
Holland, 105 Philipps & Graves
Germany, 6 T. H. Lee

Stearine—
Belgium, 125 bgs. H. Hill & Sons
" 6 cks.

Sweden, 5 cs. Knight & Morris
France, 69 bgs. H. Hill & Sons

Sulphate—
Belgium, 90 cks. Taylor Bros.

Sulphurous Acid—
Holland, 70 pks. J. Owen
" 10 Perkins & Homer

Talc—
France, £66 Blackwell & Co.

Tartaric Acid—
Holland, 20 pks. B. & F. Wf. Co.

Ultramarine—
Holland, 6 cs. J. Barber & Co.
" 9 cks. G. Rahn & Co.
" 6 W. Harrison & Co.

Varnish—
U. States, 6 pks. Dawson Bros.
" 4 Lunham & Moore
Belgium, 6 P. Penfold
Holland, 6 Philipps & Graves
Belgium, 1 W. Gerson & Co.

White Lead—
Belgium, 68 cks. T. & W. Farmiloe, Ltd.

Germany, 5 J. Barber & Co.
" 17 Perkins & Homer
" 35 H. Lambert
" 33 D. Storer & Sons
Holland, 3 J. Morrenberg & Co.
" 96 T. & W. Farmiloe, Ltd.
" 28 Burrell & Co.
Germany, 28 cks. Pinchin, Johnston, & Co.

Wood Pulp—
Sweden, 58 pks. C. Gee & Co.
" 25 J. Spicer & Sons
" 400 W. G. Taylor & Co.
" 2,760 Tough & Henderson
" 400 E. J. & W. Goldsmith
Norway, 4,230 London Paper Mill Co.
Canada, 1,351 Henderson, Craig, & Co.

U. States, 150
Holland, 800 F. Claydon & Co.
France, 100 London Paper Mill Co.
Germany, 21 F. Claydon & Co.
Belgium, 1,808 E. J. & W. Goldsmith
Norway, 1,500 Johnsen & Jorgensen

Zinc Oxide—
Holland, 50 cks. Burrell & Co.
" 100 M. Ashby, Ltd.
U. States, 200
Holland, 25 Fellows, Morton, & Co.
" 22 J. Math

Zinc Sulphate—
Germany, 16 cks. W. J. Cook
" 32 Burgoyne & Co.

LIVERPOOL.

Week ending September 30th.

Asbestos—
St. John's, Nfld., 1 bg. J. J. Langley
Rotterdam, 1 cs.

Bone Black—
Philadelphia, 20 brls.

Borax—
Galveston, 2,290 sks. Pacific Coast & Chem. Wks., Ltd.
" A. & S.
Mollendo, 602 Henry & Co.
" 501

Caoutchouc—
Havre, 4 cs. Cunard S. S. Co., Ltd.

Castor Oil — Calcutta, 1,020 cs. Ralli Brs.	Pyrites — Huelva, 5,089 t. Matheson & Co.	Beta-Naphthol — Rotterdam, 2 cks.	Dunkirk, 25 brls. "
Chemicals (otherwise undescribed) Hamburg, 74	Rosin — New York, 6 brls.	Colours — Boulogne, 9 cks.	Cream of Tartar — Rotterdam, 2 cks. Hutchinson & Son
China Clay — Hamburg, 4 bgs.	Salicylic Acid — Hamburg, 1 cs. C. Singlehurst	Farina — Rotterdam, 500 bgs.	Dextrine — Harlingen, 100 brls. W. Gilyott & Co.
Chloroform — Hamburg, 4 cs.	Salt — N. Orleans, 250 sks. J. E. Harmon	Glucose — Rotterdam, 4 cks.	Dyestuffs — Madder Rotterdam, 1 ck. Hutchinson & Son
Cod Oil — St. John's Nfld., 160 cks. C. S. Bowring & Co.	Saltpetre — Calcutta, 635 bgs. Ralli Brs.	Glue — Rouen, 13 cks.	Shumac — Palermo, 1,050 bgs. Wilson, Sons, & Co., Ltd.
" 75 T. Boyd & Co.	Soap — Naples, 38 cs.	Indigo — Rotterdam, 3 cks.	" 75
" 209 J. J. Langley	Soapstone — Bordeaux, 420 bgs. Geo. G. Blackwell, Sons & Co.	Limestone — Antwerp, 6 crts. 1 cs. 5	Trieste — Ghent, 19 bgs. Wilson, Sons, & Co., Ltd.
Colours — Rotterdam, 60 cks.	Genoa, 200 W. Harrison & Co.	Ochre — Treport, 27 cks.	Stettin, 320
Copperas — Hamburg, 33 brls.	Barcelona, 200 sks.	Oxalic Acid — Rouen, 9 cks.	Harlingen, 400 bls. Hutchinson & Son
Cream of Tartar — Tarragona, 2 brls.	Sodium Acetate — Rouen, 15 cks. Co-op. W'sale Society, Ltd.	Potash — Rouen, 2 cks.	Glucose — New York, 10 brls.
Barcelona, 5 tss. Sachse & Klemm	Sodium Nitrate — Iquique, 46,825 qntls. Gunston & Co.	Potassium Prussiate — Rotterdam, 3 cks.	Stettin, 200 bgs. Wilson, Sons, & Co., Ltd.
Bordeaux, 32 cks.	Sodium Silicate — Rotterdam, 1 ck.	Pyrites — Huelva, 1,138 t. Stott, Coker, & Co.	Glue — Antwerp, 6 bls. Bailey & Leetham, Ltd.
Creosote Oil — New York, 50 brls. Kentucky Refg. Co.	Starch — Boston, 400 bgs.	Soap — Boulogne, 1 ck.	Rotterdam, 5 bgs. W. & C. L. Ringrose
Dyestuffs — Aniline Salts Rotterdam, 8 cks.	Dunkirk, 10 cs.	Sodium Nitrate — Rotterdam, 24 cks.	Dunkirk, 73 cks. Wilson, Sons, & Co., Ltd.
Argols Porto, 27 cks.	Antwerp, 120 J. T. Fletcher & Co.	Sodium Sulphate — Rotterdam, 12 cks.	Lead Acetate — Hamburg, 1 ck. Bailey & Leetham, Ltd.
Cochineal d. Canary, 3 bgs. G. M. Ceballos & Co.	Rotterdam, 100 Browne, Geveke & Co.	Starch — Rotterdam, 5 cks. 185 cs. 185	Limestone — Antwerp, 2 crts. Wilson, Sons, & Co., Ltd.
Teneriffe, 5 sks. Kolf Kullman & Co.	Stearine — Rouen, 13 bgs. Co-op. W'sale Society Ltd.	Stearine — Antwerp, 39 bgs.	Minium — Amsterdam, 6 cks. W. & C. L. Ringrose
" 50 Brown Brs. & Co.	Antwerp, 39 J. T. Fletcher & Co.	Tartaric Acid — Rotterdam, 1 ck.	Ochre — New York, 158 brls.
Cutch angoon, 2,150 bss.	Tallow — Baltimore, 150 tcs.	White Lead — Rotterdam, 19 cks.	Paint — Trieste, 26 cs. Wilson, Sons, & Co., Ltd.
Logwood Laguna De Terminos, 100 t. Skelton & Schofield	Tar — Havre, 1 ck. Cunard S. S. Co. Ltd.	Wood Pulp — Gothenburg, 2,444 bls.	Philadelphia, 10 brls.
Madder Rotterdam, 5 cks.	Tartar — Lisbon, 18 bgs. Job Brs & C.	Zinc Ashes — Antwerp, 16 brls.	Phosphate — Ghent, 80 t.
Saffron Valencia, 1 cs.	Tartaric Acid — Trieste, 5 brls.	Zinc Oxide — Rotterdam, 107 brls.	Pitch — Amsterdam, 13 cks. Hutchinson & Son
Shumac Palermo, 2,100 bgs.	Rotterdam, 3 cks.	Zinc Sulphate — Rotterdam, 2 brls.	Antwerp, 2
Valonia Sarathonisi, 2,729 bgs.	Treacle — Bordeaux, 1 cs.		Potash — Dunkirk, 67 pks. Wilson, Sons, & Co., Ltd.
Farina — Stettin, 100 bgs.	Philadelphia, 1,000 brls.		Pumice Stone — Messina, 390 pks. Wilson, Sons, & Co., Ltd.
Fiume, 730	Turpentine — Trieste, 25 cs.		
Havre, 1,500 sks. Cunard S. S. Co., Ltd.	Ultramarine — Rotterdam, 20 cks.		Rosin — Brunswick, Ga., 2,025 brls.
Gelatine — Rouen, 25 cs. Co-op. W'sale Society, Ltd.	Waste Salt — Hamburg, 1,118 bgs.		Saltpetre — Hamburg, 12 bgs. Wilson, Sons, & Co., Ltd.
Havre, 2 Cunard S. S. Co., Ltd.	White Lead — Dunkirk, 12 cks.		Soda — Antwerp, 11 cks. Bailey & Leetham, Ltd.
Glucose — Stettin, 150 bgs.	Antwerp, 20 cs. J. T. Fletcher & Co.		" 100
New York, 100 brls.	Wood Pulp — New York, 221 bds. Christie & Co.		Starch — Amsterdam, 80 cs. Hutchinson & Son
Dunkirk, 250 bgs.	Skien, 5,425 bls. H. Tyrer & Son		Antwerp, 260
Glue — Genoa, 13 cks.	Montreal, 178 rolls Thin & Sinclair		Bremen, 2,627
St. Nazaire, 20 6 bls.	Zinc Skimmings — New York, 11 cks. 7 brls.		1,295 pks. Leetham, Ltd.
Rouen, 57 Co-op. W'sale Society, Ltd.			Rotterdam, 825 cs. W. & C. L. Ringrose
Hamburg, 10 bgs.			Antwerp, 64 Wilson, Sons, & Co., Ltd.
Rotterdam, 11 cks.			Stearine — Antwerp, 148 bgs. Wilson, Sons, & Co., Ltd.
Lactic Acid — Boston, 5 brls. J. Taylor & Co.			Tallow — New York, 126 tcs. Wilson, Sons, & Co., Ltd.
Lamp Black — New York, 25 brls.			Boston, U.S.A., 25 brls.
Manganese Ore — Ergasteria, 2,800 t.			Dunkirk, 233 cks. "
Mineral White — Fiume, 1,285 bgs.			Tartaric Acid — Rotterdam, 2 cks. Hutchinson & Son
Genoa, 20			Treacle — New York, 546 brls. Wilson, Sons, & Co., Ltd.
Paint — New York, 4 brls. 2 hf.-brls. R.W. Blackwell			Boston, 425 "
Boston, 1 kg.			
Antwerp, 1 ck.			
Paraffin Scale — New York, 195 brls. Thompson & Bedford			
Philadelphia, 65			
Paraffin Wax — Philadelphia, 400 brls. Anglo-Am. Oil Co. Ltd.			
Phosphate — Ghent, 390 t.			
Plumbago — Genoa, 80 bgs.			

HULL.

Week ending October 2nd.

Acids — Bari, 20 cks. Wilson, Sons, & Co., Ltd.	Albumen — Riga, 20 cks. Morley, Clarke, & Co.	Asbestos — Boston, 2,000 bgs. Wilson, Sons, & Co., Ltd.	Barytes — Amsterdam, 93 cks. Hutchinson & Son
Boston, U.S.A., 5 brls.	Antwerp, 1 ck. "	U.S.A., 2,000 bgs. Wilson, Sons, & Co., Ltd.	Antwerp, 86
Alumens — Riga, 20 cks. Morley, Clarke, & Co.			Bremen, 44
" 9 cs.			Antwerp, 200
Chemicals (otherwise undescribed) Amsterdam, 5 cks. Hutchinson & Son	Colours — Bremen, 20 cks. Sissons Brs. & Co.	Chemicals (otherwise undescribed) Amsterdam, 5 cks. Hutchinson & Son	Antwerp, 59
Christiania, 40	" 59	Christiania, 40	New York, 1
Bremen, 5	" 59	Bremen, 5	Antwerp, 5 cs.
Rotterdam, 4	" 59	Rotterdam, 4	" 40 cks.
	" 59		" 12 brls. Wilson, Sons, & Co., Ltd.
	" 59		" 1 ck.

MANCHESTER.

Week ending October 2nd.

Acetic Acid — Rotterdam, 18 blns.	Acetone — Treport, 29 cks.	Alizarine — Rotterdam, 18 cks. 171 brls.	Ammonium Chloride — Rotterdam, 7 cks.
Ammonium Sulphate — Rotterdam, 16 cks. 23 cs. 23 cyldrs.	Aniline Colours — Rotterdam, 9 cks. 3 cs. 1 bx.	Antimony Salts — Rotterdam, 10 cks.	Barytes — Antwerp, 220 bgs.

Turpentine — Brunswick, 1,182 brls. The Master	Cutch — New York, 200 bxs.	Wood Pulp — Fiume, 400 bls.	Caoutchouc — Boulogne, 11 cks.
Ultramarine — Rotterdam, 1 cs. W. & C. L. Ringrose	French Chalk — Fiume, 200 bgs. P. M'Intosh & Sons	Montreal, 1,178 bndls.	Colours — Hamburg, 20 cks. 2 cs.
" 4 cks. Hutchinson & Son	" 100	Hamburg, 33 bls.	Dyestuffs (otherwise undescr.) Boulogne, 9 cks. 42 pks.
Yarnish — Antwerp, 1 cs. Wilson, Sons, & Co., Ltd.	Glucose — New York, 200 brls.	Gothenburg, 40	Rotterdam, 330 76 cs.
White Lead — Antwerp, 32 cks. Bailey & Leetham, Ltd.	Glue — Hamburg, 275 bgs.	Christiania, 750	Farina — Delfsryhl, 100 bgs.
" 39 H. F. Pudsey	Lead Acetate — Hamburg, 24 cks.	Christianasand, 2,030	Glucose — Hamburg, 20 cks.
Amsterdam, 36 W. & C. L. Ringrose	Litharge — Rotterdam, 30 cks. J. Rankine & Son		Glue — Hamburg, 10 cks.
Wood Pulp — Drontheim, 564 bls. Wilson, Sons, & Co., Ltd.	Manganese Ore — Fiume, 202 bgs.		Boulogne, 4
Helsingfors, 194 J. Good & Sons	Molasses — New York, 873 brls.		Iron Ore — Huelva, 510 t.
Trieste, 300 Wilson, Sons, & Co., Ltd.	Oxalic Acid — Rotterdam, 9 cks. J. Rankine & Son		Lead Acetate — Hamburg, 4 cks.
Zinc White — Rotterdam, 35 cks. Hutchinson & Son	Paint — New York, 3 cs. 5 kgs.		Logwood — Belize, 330 t.

GLASGOW.
Week ending October 7th.

Acetic Acid — Rotterdam, 7 cks. J. Rankine & Son	Paraffin Scale — Philadelphia, 282 brls.	Alum Earth — Hamburg, 26 cks. Tyne S. S. Co.	Antimony Ore — Antwerp, 1,696 bgs. Tyne S. S. Co.
Ammonium Nitrate — Rotterdam, 1 ck. J. Rankine & Son	New York, 375	Barium Chlorate — Rotterdam, 350 bgs. Tyne S. S. Co.	Barytes — Antwerp, 300 bgs. Tyne S. S. Co.
Arachide Oil — Rotterdam, 20 cks. J. Rankine & Son	Phosphate of Lime and Rock — Ghent, 1,020 bgs.	Colours — Antwerp, 5 cks. Tyne S. S. Co.	Glue — Antwerp, 1 ck. Tyne S. S. Co.
Barium Sulphate — Antwerp, 400 bgs.	Pitch — Hamburg, 80 cks.	Paint — Gothenburg, 3 cs.	Phosphate — Dunkirk, 130 t.
Barytes — Rotterdam, 7 cks. J. Rankine & Son	Pyrites — Huelva, 2,113 t. Tharsis Co.	Plumbago — Hamburg, 6 cks. Tyne S. S. Co.	Soap — Rotterdam, 50 cs. Tyne S. S. Co.
Hamburg, 43 cks. 50 bgs.	Rosin — New York, 3,250 brls.	Starch — Ghent, 24 cs. Tyne S. S. Co.	Antwerp, 140 "
Castor Oil — Antwerp, 55 cks.	Soap — Philadelphia, 601 pks.	White Lead — Antwerp, 12 cks. Tyne S. S. Co.	
Colours — Antwerp, 1 ck. J. Rankine & Son	New York, 505 brls. 25 cs.	Wood Pulp — Christiania, 1,600 bls. 60 cs.	
Rotterdam, 51 pks.	Fiume, 167	Gothenburg, 205 t. 15 c.	
Cottonseed Oil — New York, 237 brls.	Sodium Acetate — Antwerp, 16 cks.		
Dyestuffs — Alizarine	Starch — New York, 1,100 bgs.		
Rotterdam, 119 cks. J. Rankine & Son	Rotterdam, 100 cs. J. Rankine & Son		
15 brls.	Antwerp, 30 20 bgs.		
Aniline — Rotterdam, 32 brls. J. Rankine & Son	Stearine — Rotterdam, 10 cks. J. Rankine & Son		
5 bxs.	Tromsøe, 39 brls.		
Aniline Colours	Sulphur — Gingenti, 602 t.		
Amsterdam, 1 cs.	Tar — Christiania, 1 brl.		
Hamburg, 6	Treacle — Philadelphia, 803 brls.		
	Yarnish — New York, 103 brls. 21 cs.		
	Waste Salt — Hamburg, 252 cks.		
	White Lead — Rotterdam, 49 cks. J. Rankine & Son		

TYNE.
Week ending October 2nd.

Alum Earth — Hamburg, 26 cks. Tyne S. S. Co.	Antimony Ore — Antwerp, 1,696 bgs. Tyne S. S. Co.	Barium Chlorate — Rotterdam, 350 bgs. Tyne S. S. Co.	Barytes — Antwerp, 300 bgs. Tyne S. S. Co.
Colours — Antwerp, 5 cks. Tyne S. S. Co.	Glue — Antwerp, 1 ck. Tyne S. S. Co.	Paint — Gothenburg, 3 cs.	Phosphate — Dunkirk, 130 t.
Plumbago — Hamburg, 6 cks. Tyne S. S. Co.	Soap — Rotterdam, 50 cs. Tyne S. S. Co.	Starch — Ghent, 24 cs. Tyne S. S. Co.	Antwerp, 140 "
White Lead — Antwerp, 12 cks. Tyne S. S. Co.	Wood Pulp — Christiania, 1,600 bls. 60 cs.	Gothenburg, 205 t. 15 c.	

GOOLE.
Week ending September 29th.

Alizarine — Rotterdam, 136 cks.	Alkali — Calais, 7 cks.	Alum — Rotterdam, 21 bgs.	Alumina Sulphate — Rotterdam, 15 cks.	Antimony — Boulogne, 2 cks.
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GRIMSBY.
Week ending October 2nd.

Albumen — Hamburg, 5 cks.	Aniline — Hamburg, 10 pks.	Caoutchouc — Antwerp, 114 4 cs.	Colours — Antwerp, 10 cks. 1 cs. 6 pks.	Rotterdam, 73 12 8	Hamburg, 4
Pitch — Hamburg, 80 cks.	Soap — Hamburg, 1 cs.	Starch — Antwerp, 104 cs.	Wolfman Ore — Hamburg, 10 cs.	Wood Pulp — Malmo, 800 bls.	

Hamburg,	6	51
Helingsfors,	30 bgs.	17
Hrussels,	5	23
Pitch		
Hochfeld,	146 t.	£200
Delagoa Bay,	60 kgs.	17
Newport News,	150 cks.	132
Sables d'Olonne,	1,170	1,316
New York,	268	128
Cette,		1,300
Boston,	500 brls.	155
Rotterdam,	100	125
Pyridine		
Stettin,	5 cks.	£58
Pyridine Bases		
Hamburg,	2 dms.	£82
Tar		
Singapore,	12 cks.	£14
Sydney,	2	17
Pt. Elizabeth,	250 dms.	7
Beira,	100	24
Stockholm,	1	5
Delagoa Bay,	85	17
Durban,	380	21
Cologne,	200 brls.	140
Toluol		
Rotterdam,	50 cks.	£326
Coal Products (otherwise undes.)		
Beira,	20 brls.	£18
Adelaide,	15 pks.	6
Copper Sulphate		
Bourgas,	15 c.	£12
Boulogne,	9 t. 18	150
Melbourne,	5 8	78
Copperas		
Auckland,	130 bgs.	£32
Cream of Tartar		
Gisborne,	5 c.	£20
Sydney,	3 t.	250
Melbourne,	2	158
Disinfectants		
Melbourne,	46 c.	£46
Auckland,	4	22
Durban,	178 pks.	57
Sydney,	77 222	344
Cape Town,	120 cks.	42
Lisbon,	2	14
Guano		
Paris,	2 t. 14 c.	£70
Lime		
Trinidad,	70 t.	£205
Manure		
Bordeaux,	30 t.	£70
Berbec,	35	290
Durban,	10 14 c.	66
Madeira,	3 1	23
Samarang,	7 13	63
Malaga,	100 18	1,200
Jersey,	238	730
Nitric Acid		
Jersey,	48 crbys.	£84
Phosphoric Acid		
Trinidad,	8 cks.	£18
Phosphorus		
Melbourne,	10 cs.	£97
Wellington,	8 c.	83
Potash Salts		
Auckland,	5 t. 17 c.	£550
Potassium Cyanide		
Durban,	17 t.	£1,332
Madras,	11 c.	28
Pt. Elizabeth,	5	427
Adelaide,	9 4	735
Delagoa Bay,	17 15	1,212
Sydney,	3 19	20 pks. 491
Melbourne,	9 5	740
Potassium Prussiate		
Antwerp,	5 t.	£231
Salicylic Acid		
Melbourne,	3 cs.	£21
Saltpetre		
Newcastle,	10 c	£10
Corunna,	2 t. 3	40
Sheep Dip		
Wellington,	725 cs. 132 pks.	£1,350
Falklands,	5 t. 16 c.	159
Adelaide,	3 9	41
Lyttelton,	30 cs.	525
B. Ayres,	500	1,125
Boston,	20	25
Sydney,	250 180 dms. 15 cks.	524
Durban,	120	29
Soda		
Rosario,	2 t. 6 c.	£7
Cape Town,	3 15	11
Rotterdam,	5	30
Soda Crystals		
Pt. Elizabeth,	7 t. 10 c.	£21
Durban,	1 13	5
Newcastle,	15 3	43

Sodium Bicarbonate

Napier, 2 t. £15

Sodium Carbonate

E. London, 10 c. £16

Sulphur

Newcastle, 1 t. £16

Philadelpia, 3 19 c. 127

Trinidad, 3 6 20

Sulphuric Acid

Hamburg, 4 dms. £11

Durban, 10 cs. 18

Fremantle, 8 20

Pt. Elizabeth, 1 t. 18 c. 19

Cape Town, 1 18 19

Superphosphates

Durban, 5 t. 7 c. £17

Tartaric Acid

Lisbon, 5 c. £30

Melbourne, 2 t. 182

LIVERPOOL.

Week ending October 6th.

Acetic Acid

Madras, 2 t. 13 c. £60

Alum

Sydney, 1 t. £5

Madras, 7 10 c. 1 q. 40

Rabat, 1 5 3 6

Dedagatch, 1 9 4 7

San Francisco, 10 13 3 54

Cape Town, 13 8

Piræus, 3 8 16

Tunis, 1 8 7

Adelaide, 1 7

Halifax, 5 1 23

Bourgas, 3 6 3 17

Galatz, 4 16 22

Aluminous Cake

Melbourne, 5 t. 19 c. £18

Ammonium Carbonate

Rotterdam, 15 c. 1 q. £22

Marseilles, 10 15

Genoa, 1 t. 2 36

Adelaide, 6 4

Ammonium Chloride

Syra, 13 c. 2 q. £21

Piræus, 6 0

Dedagatch, 4 7

Tunis, 2 3

Trieste, 2 t. 60

Genoa, 13 2 20

Galatz, 4 7

Ammonium Sulphate

Nantes, 119 t. 14 c. 3 q. £933

Philadelphia, 25 10 215

Las Palmas, 10 85

Barcelona, 50 450

Rouen, 24 5 206

Honolulu, 20 8 160

Lisbon, 10 12 2 89

Bordeaux, 29 5 248

Valencia, 70 6 580

Demerara, 19 16 168

Anhydrous Ammonia

Lagos, 5 cs. £49

Arsenic

Natal, 9 c. 2 q. £11

Bleaching Powder

Alexandria, 20 brls.

Baltimore, 53 cks.

Bombay, 10 cs.

Boston, 890

Genoa, 30

Ghent, 72

Montreal, 75 35 pks.

New York, 719 45 brls. 25 bxs.

Oporto, 45

Philadelphia, 89

Rio de Janeiro, 16

Rouen, 45

St. Nazaire, 32

Bone Ash

Marseilles, 10 t. 3 c. £165

Boric Acid

Hiogo, 2 t. 10 c. £62

Adelaide, 1 2 1 q. 20

Antwerp, 10 12

Stettin, 5 2 2 128

Borax

Brisbane, 10 c. £8

Antwerp, 1 t. 10 22

New York, 20 28

Hamburg, 10 4 2 q. 163

Rotterdam, 11 6 240

Copenhagen, 1 15 2 23

Kustendjie, 4 5

Rangoon, 6 5

Genoa, 1 1 21

Dunedin, 1 20

Montreal, 26 16 2 501

Toronto, 2 4 2 32

Calcium

Colombo, 19 c. £2

Sydney, 2 t. 2 7

Marseilles, 4 14 11

Calcium Chloride

Dunedin, 6 t. 2 c. £15

Carbolic Acid

E. London, 2 c. 1 q. £5

B. Ayres, 7 20

Port Said, 5 t. 2 2 50

Montreal, 11 2 68

New York, 12 cks. 96

Caustic Potash

Goolong, 2 t. £55

Caustic Soda

Adelaide, 35 dms.

Alexandria, 21 22 cks.

Alicante, 30 40 pks.

Algoa Bay, 55 cs.

Amsterdam, 145 4 brls.

Amterp, 137

Bahia, 137

Baltimore, 100

Barbadoes, 10

Barranquilla, 10

Barcelona, 45

Bombay, 54

Boston, 50

B. Ayres, 150 cks.

Cartagena, 15

Ceara, 30

Constantinople, 55

Coronel, 25

Corunna, 8 brls.

Dunkirk, 3

Fairwater, 50

Fiume, 19

Fremantle, 35

Galatz, 224

Genoa, 273

Hamburg, 105

Hiogo, 678

Leghorn, 95

Malaga, 92

Marseilles, 150

Melbourne, 26 10 cs.

M. Video, 175

Montreal, 160 60 pks.

Nagasaki, 50

N. Orleans, 180

New York, 210

Oporto, 128

Pernambuco, 120

Porto Alegre, 20

Quebec, 25

Rio de Janeiro, 24

Rotterdam, 80

Rouen, 35

St. Petersburg, 300

San Francisco, 150 130 pks.

Seville, 192

Sourabaya, 35

Stettin, 108

Sydney, 10

Tampico, 200

Valencia, 100 30 10 brls.

Venice, 35

Vera Cruz, 42

Vigo, 35

Yokohama, 200

Chemicals (otherwise undes.)

Rotterdam, 1 t. £28

New York, 7 15 c. 265

Cayenne, 1 2 11

Yokohama, 5 152

Odessa, 3 10 86

Calcutta, 57 11 200

Antwerp, 1 29

China Clay

Baltimore, 250 cks.

Barcelona, 600 bgs.

Bilbao, 475

Bombay, 340

Boston, 2,315

Calcutta, 16 35 t.

Fiume, 240

Montreal, 220 145 bgs.

Naples, 40

Philadelphia, 241

Rio de Janeiro, 40

Pitch

Certe, 1,470 t.

Marseilles, 181

Vigo, 50 brls.

Tar

Accra, 20 brls.

Ambrizette, 10

Boma, 20 cks.

New York, 37

Noqui, 8

Philadelpia, 150

Coal Products (otherwise undes.)

Valencia, 7 cs.

Copper Sulphate

Bordeaux, 5 t. £83

Messina, 4 19 c. 80

M. Video, 4 19 1 q. 79

Santander, 6 10 3 103

Copenhagen, 2 11 40

Naples, 10 2 150

Rotterdam, 13 10 3 212

Alexandria, 9 8

Piræus, 4 2 5

Calamata, 25 409

Corunna, 9 7

Hamburg, 1 6 19

Odessa, 3 4 2 55

Madras, 1 5 21

Syra, 42 3 10

Porto Alegre, 2 10 40

Ghent, 4 19 2 85

Patras, 4 18 2 79

Antwerp, 15 2 252

Catania, 15 1 2 232

Stettin, 5 5 3 80

Copperas

Larnaca, 7 t. 15 c. £14

Syra, 3 15 2 q. 7

Disinfectants

Calcutta, 1 t. £11

Rio de Janeiro, 7 c. 3 q. 10

Rangoon, 9 36

Dried Blood

New York, 30 t. 7 c. 2 q. £179

Calcutta, 22 55 cs.	Cayenne, 70 74	New York, 125 kgs. 392	Ammonium Carbonate—
Callao, 22 40	Cette, 25	Philadelphia, 308	Danzig, 10 kgs.
Corinto, 19	Chama, 25	St. John's, Nfld., 100	Konigsberg, 10
Karachi, 130 kgs.	Colon, 1	Sodium—	Ammonium Chloride—
Manaos, 8 cks.	Conakry, 75	Rotterdam, 1 t. 12 c. £150	Bagdad, 15 cks. 15 brls.
M. Video, 5	Copenhagen, 172	Sodium Arseniate—	Bushire, 2
Para, 16	Curacao, 150	Montreal, 11 cks.	Ammonium Sulphate—
Philadelphia, 140 pks.	Demerara, 3,613 1	Sodium Bicarbonate—	Rouen, 524 bgs.
Paraffin Wax—	Durazzo, 1	Alexandria, 50 brls.	Aniline Colours—
Bahia, 10 cs.	E. London, 2,200 51	Algoa Bay, 160 kgs.	Hamburg, 10 kgs.
Bordeaux, 55	Genoa, 110	Amsterdam, 70	Rotterdam, 54 1 cs.
Cephalonia, 14 bgs.	Gibraltar, 160 20	Antwerp, 25	Rouen, 2
Para, 5	Gd. Lahou, 75	Bari, 60	Aniline Oil—
Phosphoric Acid—	Grenada, 50	Batavia, 25	Rotterdam, 13 tins 3 dms.
Demerara, 3 t. 2 c. 2 q. £47	Guadeloupe, 450	Bombay, 970 17 cks.	Carbolic Acid—
Phosphorus—	Guayaquil, 125	B. Ayres, 20	Rouen, 80 btl.
Hamburg, 3 c. £42	Havre, 2,150	Calcutta, 125 6	Caustic Soda—
Hong Kong, 5 70	Karachi, 1,002 138	Cape Town, 8 bgs.	Tunis, 10 dms.
Shanghai, 18 120	Kingston, 115	Colombo, 20 4	Alexandria, 40
Hio, 1 t. 5 265	Lagos, 643	Danzig, 27 pks. 8	Beyrout, 95
Yokohama, 1 260	Landana, 250 15	E. London, 335 50 bgs.	Chemicals (otherwise undescribed)
Vera Cruz, 2 22	Larnaca, 45	Freemantle, 289 2	Antwerp, 13 kgs.
Picric Acid—	Lanzarote, 579	Gefle, 4	Rotterdam, 20
New York, 2 t. 10 c. £60	Las Palmas, 60	Genoa, 289 2	Bushire, 2 cs.
Potash Salts—	Loango, 76 1 bdl.	Ghent, 2	Copperas—
N. Orleans, 6 t. 3 c. 3 q. £506	Madras, 75	Halifax, 210	Alexandria, 188 brls.
Potassium Bichromate—	Malta, 1	Hamburg, 10 2	Tripoli, S., 25
Smyrna, 5 t. 6 c. 1 q. £211	Manaos, 1,000	Havana, 12	Dyestuffs (otherwise undescribed)
Montreal, 5 10 198	Matadi, 132	Hio, 1,000	Bushire, 30 cs.
Dunkirk, 4 18 2 195	Mauritius, 545	Karachi, 390 2	Linseed Oil—
Samsoun, 1 ck. 22	Messina, 1	Kingston, 25	Alexandria, 72 brls.
Potassium Chlorate—	Montreal, 550	Madras, 275	Logwood—
Yokohama, 5 t. £163	M'Pougue, 60	Marseilles, 62 2 brls. 3	Christiania, 50 bgs.
Philadelphia, 3 5 c. 98	New York, 7,150	M. Video, 50	Mirbane Oil—
New York, 4 10 140	Penang, 42	Montreal, 914	Antwerp, 2 tins
Genoa, 1 30	Patras, 10	Naples, 1914	Naphthionate—
Lisbon, 1 35	Piraeus, 58	Newcastle, 50 5	Rotterdam, 16 cks.
B. Ayres, 10 3 q. 20	Pt. Elizabeth, 277	New York, 20 10	Paint—
Lihau, 5 0	Pt. Said, 100 50	Oporto, 30	Bagdad, 3 cks.
Hamburg, 10 18	Rangoon, 750 30	Quebec, 50	Alexandria, 100 kgs.
Hong Kong, 3 90	St. John's, Nfld., 125 50	Rangoon, 165	Bombay, 20
Hio, 25 838	Salonica, 30	Rotterdam, 100	Painters' Colours—
Gutjewsky, 20 604	Sapeli, 50	Rouen, 30	Alexandria, 1 ck.
Copenhagen, 5 171	Shanghai, 8,112	Samarang, 25 5	Beyrout, 10 brls. 50 dms
Salt—	Singapore, 2,247	Santos, 100	Paraffin Wax—
Amsterdam, 110 t.	Smyrna, 8 20	Savannah, 9 cs. 100 bxs.	Hamburg, 20 cs.
Antwerp, 295	Teneriffe, 100	Sette Camma, 340 8	Potassium Chlorate—
Baltimore, 450	Tarragona, 2 cks.	Trieste, 10	Rouen, 2 cks.
Barbadoes, 50	Trieste, 4 dms.	Valencia, 10	Soap—
Boston, 300	Trinidad, 1,000	Venice, 190	Bagdad, 40 bxs.
B. Ayres, 42 6 c.	Warri, 500	Yokohama, 2,050 bgs.	Ghent, 10
Bururu, 525 3	Soda Alkali—	Sodium Bichromate—	Bombay, 22 cks.
Calcutta, 3,744	Barcelona, 85 brls.	Dunkirk, 16 cks.	Soda Ash—
Camerons, 1,169 bgs.	Quebec, 30	Sodium Carbonate—	Beyrout, 50 brls.
Cape Lahou, 25 t.	Vigo, 20	Boston, 56 brls.	Sodium Bicarbonate—
Demerara, 1,300 brls.	Soda Ash—	Sodium Chlorate—	Tripoli, S., 20 kgs.
E. London, 17 t.	Adelaide, 43 cks.	Copenhagen, 5 cks.	Sulphuric Acid—
Egwanga, 1,500 bgs.	Algoa Bay, 100 kgs.	Hamburg, 20 kgs.	Mohammerah, 0 cs.
Ghent, 150 t.	Antwerp, 1,494 bgs.	Rotterdam, 80	Tallow—
Honolulu, 10 20 cs.	Baltimore, 17	Sodium Prussiate—	Rotterdam, 5 brls.
Kingston, 2,489 bgs.	Barranquilla, 60 kgs. 20	Boston, 20 cks.	Bombay, 1 ck.
Loango, 10 t.	Barcelona, 20	Sodium Sulphate—	Toluol—
Manzanillo, 4 bgs.	Bombay, 10	Rotterdam, 222 bgs.	Rotterdam, 17 dms.
Matadi, 20 t. 18 c.	Boston, 200 bgs. 145	Sodium Tartrate—	Turpentine—
Memel, 220	B. Ayres, 90 tcs.	Montreal, 1 ck.	Beyrout, 1 dm.
M. Video, 220 cs.	Callao, 100 brls. 69	Sulphur—	Whiting—
Montreal, { 13,420 bgs.	Copenhagen, 100 30 19	St. John's, 60 t. £256	Bombay, 30 cks.
N. Orleans, 450 t.	Corfu, 30 19	Montreal, 81 392	Zinc Chloride—
Old Calabar, 40 3 c.	Fiume, 16	Boston, 350 14 1,504	Bombay, 5 cks.
Pt. Natal, 100	Freemantle, 66	Sulphuric Acid—	
Rangoon, 1,434	Genoa, 750	Rio Grande do Sul, 10 c. 3 q. £8	
Rio Grande, 35 14	Ghent, 50	Tientsin, 2 3 5	
Rotterdam, 46	Hamburg, 450 100 43	Iquitos, 9 9	
Valparaiso, 256 5	Karachi, 250 kgs. 75 25	Callao, 4 cs. 5	
Wilborg, 600	M. Video, 800 bgs. 50 tcs.	Superphosphates—	
Wilmington, 300	Montreal, 1,002 64 398	St. Nazaire, 480 t. £1,130	
Salt Cake—	New York, 35 cs. 43	Havre, 100 250	
Lisbon, 10 t. 3 c. £20	Philadelphia, 1,500 366 25	Valencia, 310 7 c. 3 q. 910	
Antwerp, 60 65	Porto Alegre, 20 dms.	Teneriffe, 4 8	
Saltpetre—	Piraeus, 32 cs. 20	Tin Crystals—	
Boca, 5 c. £5	Rio de Janeiro, 20 10	Trinidad, 1 6 c. 3 q. £77	
Sheep Dip—	St. Petersburg, 96	Varnish—	
Cape Town, 320 cs. £320	Samarang, 12	Alexandria, 2 cs.	
Algoa Bay, 51 t. 10 c. 2 q. 1,375	Stettin, 200 bgs. 286	Cardena, 10 dms. 1	
M. Video, 7 13 3 186	Sydney, 100	Mollendo, 1 ck.	
Rangoon, 14 2 10	Venice, 300	Zinc Chloride—	
Wellington, 5 6 1 118	Yokohama, 300	Copenhagen, 2 t. 15 c. 1 q. £50	
Soap—	Soda Crystals—	Bombay, 2 16 2 39	
Aden, 50 bxs.	Adelaide, 134 cks.	MANCHESTER.	
Alexandria, 70 85 cs.	Alexandria, 60 brls.	Week ending October 6th.	
Algoa Bay, 540 102	Bombay, 250 kgs.	Alum—	
Antwerp, 2,529	Calcutta, 20	Bushire, 20 brls.	
Assinee, 50	Demerara, 30 101	Alexandria, 25	
Barbadoes, 500 39	Freemantle, 20	Beyrout, 10	
Bombay, 500 39	Halifax, 125	Tripoli, S., 10	
B. Ayres, 100	Karachi, 35		
Cabenda, 150	Kingston, 3		
Calcutta, 29 100 bdl.	Montreal, { 410 325		
Camerons, 700	75 bgs.		
Cape Lahou, 30			
Cape Town, 2,040			

Gothenburg,	15	2	31
Hamburg,	24	315	
Kurrachee,	646		
Konigsberg,		6	
Libau,	20		
New York,		10	
Riga,	55	537	
Stettin,	12	5	
Coal Products (otherwise undes.)—			
Stettin,		10 cs.	
Cottonseed Oil—			
Antwerp,	200 c.		
Amsterdam,	8c8		
Dunkirk,	100		
Drontheim,	52		
Gothenburg,	19		
Hamburg,	1,211		
Rotterdam,	124		
Rouen,	200		
Stettin,	103		
Dyestuffs (otherwise undescribed)			
Christiania,	2 cks.		
Riga,	5		
Stockholm,	10		
Glue—			
Dunkirk,	15 cks.		
Ghent,	4		
Linseed Oil—			
Antwerp,	7 c.		
Bombay,	660		
Christiansund,	18		
Copenhagen,	55		
Christiania,	300		
Drontheim,	54		
Hamburg,	84		
Rouen,	300		
Manure—			
Antwerp,	12 t.		
Stettin,	4,086 bgs.		
Mineral White—			
Hurlingen,	200 bgs.		
Stettin,	50 bls.		
Paint—			
Bombay,	225 cks.		
Painters' Colours—			
Antwerp,	12 cks.	168 pks.	5 dms.
Amsterdam,	1		
Bergen,	1	1 cs.	
Bombay,	208	80	
Boston,	6		
Bremen,	30	37	68
Copenhagen,	2	1	
Christiania,	18		
Dunkirk,	18		
Ghent,	96	1 pk.	
Gothenburg,	18	2	20 dms.
Hamburg,	18	2	
New York,	350		
Rotterdam,	14	4	
Pitch—			
Antwerp,	119 t.		
Starch—			
Copenhagen,	80 cs.		
Tallow—			
Antwerp,	38 cks.		
Amsterdam,	32		
Stockholm,	2		
Tar—			
Antwerp,	33 cks.		
Amsterdam,	5		
Copenhagen,	14		
Drontheim,	15 bls.		
Hamburg,	25 brls.		
Varnish—			
Bremen,	16 cs.		
Copenhagen,			
Ghent,	1		

GLASGOW.

Week ending October 7th.

Alkali—			
Amsterdam,	2 t.	4 c	
Alumina Sulphate—			
Bombay,	5 t.	8 c.	
Ammonia (Liquid)—			
Bordeaux,			£37
Ammonium Sulphate—			
Barcelona,	49 t.	17½ c.	
Valencia,	48	13½	
Rotterdam,	25	6	
Rouen,	73	5½	
Bichrome—			
Sydney,			£50
Borax—			
U.S.A.,			£73
Rotterdam,	10 t.	5 c.	
Brishane,			£25
Montreal,			£48

Carbolic Acid—			
Brishane,			£60
Castor Oil—			
Sydney,			£45
Adelaide,			108.
Caustic Soda—			
Canada,	18 t.	5 c.	£59
Coal Products—			
Aniline			
Calcutta,			£33
Benzine			
France,			£146
Benzol			
Hamburg,	17 t.	2 c.	
Creosote Oil			
U.S.A.,			£65
Christiania,			30
Helsingfors,	qtv.		
France,			1,347
Brishane	1 t.	5 c	
Pitch			
Amsterdam,	530 t.		
Christiania,			£50
Hamburg,	21	10 c.	
Canada,			114
St. Nazaire,			1,137
Tar			
Christiania,			£45
Penang,			40
Danzig,	120 t.	6 c.	
U.S.A.,			97
Riga,	565 brls.		
Tar Oil			
Hamburg,			12
Coal Products (otherwise undes.)—			
Amsterdam,	11 t.	18 c.	
Rotterdam,	11	5	
New York,	302		
Copperas—			
Bombay,			£49
Dried Blood—			
Rouen,	25 t.	4 c.	
Dyestuffs (otherwise undescribed)			
Lisbon,			£34
Amsterdam,	2 t.	16 c.	138.
Rotterdam,		qtv.	
Extracts—			
Hamilton,			£164
Toronto,			328
Almonte,			226
Malaunay			64
Gelatine—			
Algoa Bay,			£36
Canada,			146
Iodine—			
Rotterdam,			£1,480
Lead Acetate—			
Bombay,			£39
Lead Nitrate—			
Canada,			£
Paris,			1
Lead Sulphate—			
Stockholm,	5 t.		
Linseed Oil—			
Canada,	6 t.	18½ c.	
Mauritius,	1	4	
Litharge—			
Bombay,			£40
Montreal,			407
Logwood—			
Almonte,			£29
Madder—			
Almonte,			£53
Manganese—			
Basle,			£95
U.S.A.,			160
Rotterdam,			85
Paint—			
Algoa Bay,			£32
Canada,			20
Havana,			58
Talcabahuano,			34
Valparaiso,			59
Calcutta,			390
Singapore,		ty.	
Brishane,			1
Painters' Colours—			
Buluwayo,			£26
Kobe,			38
Nagasaki,		qtv.	
Singapore,		"	
Yokohama,		"	
Calcutta,		"	23
Penang,		"	90
Amsterdam,			110
Rockhampton,			
Paraffin Wax—			
Algoa Bay,			£293
Barcelona,			104

Bordeaux,			53
Lisbon,			27
Nantes,			29
Amsterdam,	5 t.	13 c.	
Christiania,			41
Skien,			22
Rotterdam,			2½
Stockholm,			142
Potash Salts—			
Mexico City,			£285
Potassium Bichromate—			
Ghent,			£159
Christiania,			18
Bombay,			174
Paris,			211
Rouen,			65
Hiogo,			421
Potassium Chlorate—			
Sydney,			£175
Salt—			
Brishane,	456 t.		
Sheep Dip—			
B. Ayres,			£271
Soap—			
Transvaal,	5 t.	14½ c.	
Bombay,	2	13½	
New York,	1	7½	
Sodium Bichromate—			
Ghent,	1 t.	17½ c.	
U.S.A.,	15	19½	
Bombay,	27		
Almonte,	1	6½	
Rouen,	4	8½	
Starch—			
Barcelona,			£37
Rotterdam,	2		
Tallow—			
Bilbao,	24 t.	2 c.	
Rotterdam,	5	2	
Tin Crystals—			
Lisbon,			£23
Treacle—			
Pretoria,	1 t.	10 c.	
Stockholm,	6	11½	
Cape Town,	4	7½	
Yarnish—			
Rouen,			£190
Sydney,			30
White Lead—			
Transvaal,			£85
Yokohama,			45
Calcutta,			131
Brishane,			51
B. Ayres,			64
Montreal,			302

TYNE.

Week ending October 2nd.

Alkali—			
Gothenburg,	15 t.	15 c.	
Ammonium Carbonate—			
Hamburg,	1 t.		
Copenhagen,		5 c.	
Ammonium Chloride—			
Gothenburg,	1 t.	13 c.	
Ammonium Sulphate—			
Barcelona,	30 t.		
Anthracene—			
Rotterdam,	44 t.	19 c.	
Antimony—			
Antwerp,	1 t.	10 c.	
Rotterdam,	3	10	
Hamburg,	1		
St. Petersburg,	5		
Arsenic—			
Odense,	1 t.		
Oporto,		7 c.	
Barium Binoxide—			
Hamburg,	1 t.	15 c.	
Barium Carbonate—			
St. Petersburg,	72 t.	8 c.	
Bleaching Powder—			
Hamburg,	1 t.	6 c.	
Rotterdam,	31	6	
Gothenburg,	25	3	
Bone Ash—			
Spezia,	5 t.	3 c.	
Caustic Soda—			
Barcelona,	30 t.	14 c.	
Genoa,	3	16	
Copenhagen,	4	19	
Aarhus,	1	3	
Rotterdam,	11	12	
Colours—			
Genoa,	2 t.	3 c.	
Guano—			
Dunkirk,	100 t.		

Lamp Black—		
Rotterdam,	1 t.	11 c.
Litharge—		
Hamburg,	3 t.	6 c.
St. Petersburg,	4	7
Lisbon,	2	15
Magnesia—		
Barcelona,	1 t.	
Hamburg,		12 c.
Antwerp,	3	
Valencia,	1	15
Manure—		
Antwerp,	50 t.	
Valencia,	227	19 c.
Paint—		
Hamburg,	2 t.	5 c.
Antwerp,	3	
Rotterdam,		7
Para,		1
Paraffin Wax—		
Barcelona,	2 t.	17 c.
Potassium Bichromate—		
Para,		1 c.
Soda—		
Hamburg,	14 t.	15 c.
Bergen,	2	13
Constantinople,	24	14
Smyrna,	16	5
Soda Ash—		
Hamburg,	2 t.	3 c.
Sodium Sulphate—		
Gothenburg,	5 t.	3 c.
Sulphur—		
Gothenburg,	220 t.	
Superphosphates—		
Aarhus,	590 t.	1 c.
Barcelona,	20	
Tallow—		
Leghorn,	4 t.	4 c.
Varnish—		
Para,		1 c.
White Lead—		
Oporto,	4 t.	4 c.
Zinc Ashes—		
Rotterdam,	10 t.	
Zinc Skimmings—		
Rotterdam,	1 t.	8 c.

PRICES CURRENT.

WEDNESDAY, OCT. 13TH, 1897

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.B. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—

	£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/6	& 8/6
„ Glacial	„	40/-	
Arsenic S.G., 2000°	„	1	4 0
Fluoric	per lb.	0	0 3½
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0 10
„ (Cylinder), 30° Tw.	„	0	3 0
Nitric 80° Tw.	per lb.	0	0 1½
Nitrous	„	0	0 1½
Oxalic	nett	„	0 0 3½
Phosphoric, 1750°	„	0	0 11½
Picric	„	0	0 11
Sulphuric (fuming 50 %/.)	per ton	15	10 0
„ (monohydrate)	„	5	10 0
„ (Pyrites, 168°)	„	3	0 0
„ „ 150°	„	1	5 0
„ (free from arsenic, 145°)	„	1	7 6
Sulphurous (solution) S.G. 1025	„	3	0 0
Tannic (pure)	per lb.	0	1 2½
Tartaric	„	0	1 1½
Arsenic, white powdered	nett per ton	21	10 0
Alum (loose lump)	„	4	10 0
Alumina Sulphate (pure)	„	4	2 6
Aluminoferic	„	2	3 6
Aluminium (Ingot metal 98/99¾ %	nett	„	148 0 0
Ammonia, Anhydrous	per lb.	0	1 3
„ 880=28° B.	„	0	0 2½
„ =24° B.	„	0	0 1¾
„ Carbonate	nett	„	0 0 3
„ Muriate	per ton	18	0 0
„ (sal-ammoniac) 1st & 2nd	per cwt.	33/-	& 31/-
„ Nitrate	per ton	31	0 0
„ Phosphate	per lb.	0	0 3¾
„ Sulphate (grey) London	per ton	8	1 3
„ (grey) Hull	„	8	0 0
Aniline Oil (pure)	per lb.	0	0 7
Aniline Salt	„	0	0 7
Antimony	per ton	29	10 0
„ (tartar emetic)	per lb.	0	0 8
„ (golden sulphide)	„	0	0 10
Barium Chloride	per ton	6	10 0
„ Carbonate (native)	„	3	10 0
„ Sulphate (native levigated)	„	42/6	to 65/-
Bleaching Powder, 35 %	nett	„	6 5 0
„ Liquor, 7 %	„	3	10 0
Bisulphide of Carbon	„	12	0 0
Chromium Acetate (crystal)	per lb.	0	0 6
Calcium Chloride	per ton	2	5 0
China Clay (at Runcorn) in bulk	„	15/-	to 30/-

Coal Tar Products and Dyes:—

Alizarine (artificial) 20 %	nett per lb.	0	0 6¾
Magenta	„	0	3 0
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0	0 6
Benzol, 90°s	per gallon	0	1 1½
„ 50/90	„	0	2 0
Carbolic Acid (crude 60°)	per gallon	0	1 10
„ (crystallised 40°)	per lb.	0	0 7½
„ (liquid 95/97%)	per gallon	0	1 0
Creosote (ordinary)	„	0	0 2½
„ (filtered for Lucigen light)	„	0	0 3
Crude Naphtha 30 % @ 120° C.	„	0	0 10
Grease Oils, 22° Tw.	per ton	2	15 0
Pitch, f.o.b. Liverpool or Garston	„	2	18 0
Solvent Naphtha, 90 % at 160°	per gallon	0	1 7
Copper	per ton	48	7 6
„ Sulphate	„	16	10 0
„ Oxide (copper scales)	„	44	10 0
Glycerine (crude)	„	27	0 0
„ (distilled S.G. 1250°)	„	45	0 0
Iodine	nett, per oz.	0	0 7½
Iron Sulphate (copperas)	per ton	1	10 0
„ Sulphide (antimony slag)	„	2	0 0
Lead (sheet)	„	14	17 6
„ Litharge Flake (ex ship)	„	17	0 0
„ Acetate (white)	„	23	0 0
„ „ brown)	„	17	0 0
„ Carbonate (white lead) pure	„	17	0 0
„ Nitrate	„	20	0 0

Lime, Acetate (brown) (ex ship)	per ton	5	7
„ „ (grey) (ex ship)	„	8	0
Magnesium (ribbon and wire)	per oz.	0	2
„ Chloride (ex ship)	per ton	2	10
„ Carbonate	per cwt.	1	17
„ Calcined Magnesia	per ton.	8	0
„ Sulphate (Epsom Salts)	per ton	2	15
Manganese, Sulphate	„	16	0
„ Borate	per cwt.	2	10
„ Ore, 70 %	per ton	3	10
Methylated Spirit, 61° O.P.	per gallon	0	1 8
Naphtha (Wood), Solvent	„	0	2 9
„ „ Miscible, 60° O.P.	„	0	3 10

Oils:—			
Cotton-seed	per ton	16	15 0
Linseed	„	16	15 0
Stearine	per ton	22	0 0
Phosphorus (yellow)	per lb.	0	2 2
„ (red)	„	0	2 8
Potassium (metal)	per oz.	0	3 7
„ Bichromate	per lb.	0	0 4½
„ Carbonate, 90% (ex ship)	per ton	16	10 0
„ Chlorate	per lb.	0	0 4
„ Cyanide, 98%	„	0	0 10½
„ Hydrate (Caustic Potash) 90 %	per ton	23	10 0
„ „ (Caustic Potash) 75/80 %	„	19	15 0
„ Potash Hydrate Liquid 50 %	„	11	10 0
„ Nitrate (refined)	per cwt.	1	1 6
„ Permanganate	per cwt.	3	15 0
„ Prussiate Yellow	per lb.	0	0 5½
„ Sulphate, 90 % (ex ship)	per ton	9	15 0
„ Muriate, 80 % (do.)	„	8	10 0
Silver (metal)	per oz.	0	2 2½
Sodium (metal)	per lb.	0	2 9
„ Carb. (refined Soda-ash) 48 %	nett per ton	4	15 0
„ „ (Caustic Soda-ash) 48 %	„	4	5 0
„ „ (Carb. Soda-ash) 48%	„	4	0 0
„ „ (Alkali) 58 %	„	3	17 0
„ „ (Soda Crystals)	„	2	5 0
„ Acetate (ex-ship)	„	11	0 0
„ Arseniate, 45 %	„	14	7 0
„ Chlorate	per lb.	0	0 4½
„ Borate (Borax)	net, per ton.	14	15 0
„ Bichromate	per lb.	0	0 31
„ Hydrate (77 % Caustic Soda)(f.o.b.) net pr. ton	„	8	10 0
„ „ (74 % Caustic Soda)	„	8	10 0
„ „ (70 % Caustic Soda)	„	7	10 0
„ „ (60 % Caustic Soda)	„	3	12 0
„ „ (pure liquor 90° Tw.)	„	12	10 0
„ „ 77/78 % powdered (99 % hydrate)	„	6	10 0
„ Bicarbonate	„	5	0 0
„ Hyposulphite	„	15	0 0
„ Manganate, 25%	„	0	7 0
„ Nitrate (95 %) ex-ship Liverpool	per cwt.	26	10 0
„ Nitrite, 98 %	per ton	10	10 0
„ Phosphate	per ton.	4	10 0
„ Silicate (glass)	„	3	7 0
„ „ (liquid, 100° Tw.)	„	3	7 0
„ Stannate, 40 %	per cwt.	3	2 0
„ Sulphate (Salt-cake)	per ton.	0	19 0
„ „ (Glauber's Salts)	„	1	7 0
„ Sulphide	„	6	15 0
„ Sulphite	„	5	0 0
Strontium Hydrate, 100%	„	10	15 0
Sulphocyanide Ammonium, 95 %	per lb.	0	0 0
„ Barium, 95 %	„	0	0 0
„ Potassium	„	0	0 0
Sulphur (Flowers)	per ton.	7	10 0
„ (Roll Brimstone)	„	6	10 0
„ Brimstone: Best Quality	„	4	10 0
Superphosphate of Lime (26%)	„	2	5 0
Tallow (Beef)	„	18	10 0
Tin Crystals	per lb.	0	0 4½
„ English Ingots	per ton	65	10 0
Zinc (Spelter)	„	17	12 6
„ Chloride (solution, 100° Tw.)	„	4	17 6
„ Sulphate, Crystal	„	5	2 6

THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

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44.

SATURDAY, OCT. 23, 1897.

Vol. XXI.

Contents.

PAGE	PAGE
ent Abstracts	257
st	258
test Complete Speci-	259
es	259
ce	259
acetylene Generator	260
nce	260
panies	261
f Potassium	261
cation in Germany	262
rel Industry	262
ommittee	263
Trade Notes	264
Tar and Ammonia Products	264
Miscellaneous Chemical Market ..	264
The Metal Markets	264
Report on Manure Material	265
Liverpool Oil and Colour Market ..	265
Hull Paint, Oil, and Colour Report ..	265
West of Scotland Chemicals	265
Tyne Chemical Report	265
New Companies	265
Gazette Notices	266
Imports	266
Exports	268
Prices Current	272

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Advertisements intended for insertion in the current week's issue should be sent to the office by **Thursday morning** at the latest.

CURRENT TOPICS.

AN INSTRUCTIVE CASE.

A RATHER singular fatality occurred this week. A heavily loaded lorry was drawn on to the plate of a weighing machine so that only one wheel was on the top plate, and that in the centre. Consequently the plate broke, and resulted in a man who was helping to get the lorry into position being crushed to death.

The coroner seems to have been greatly struck with the future possibilities of this certainly serious mishap, and "heckled" the representative of the firm not a little. Unfortunate as the accident was, he seems to have been rather hypercritical in contending that the lorryman, not being a mechanic, could not be supposed to know that the centre of the top plate was only a bridge for the horse.

It might be so, but as in many cases the top plate is so constructed as to indicate the position of the longitudinal beams designed to carry the load, it might reasonably be contended that the lorryman would bring his lorry on to the machine so as to occupy the proper and intended position and no other. The coroner, however, still contended that it should be made impossible for the lorry to be drawn on to the weighing machine in any position except the right one.

Though we quite agree with the wisdom of the jury's recommendation, that notices should be posted giving instructions that the lorry should be drawn straight on to the machine, still it was not enough for the coroner. He wanted it made as "impossible as it could be" for the wheels to get on to the machine in any save the right position.

Even the Inspector of Factories did not think the enforcing of such precautions was necessary in this case.

There is, however, another aspect to which we should like to call attention. In disposing of the plea that the lorryman ought to have drawn the lorry straight on to the machine at the point where the longitudinal beams were provided, the coroner waxed eloquent, and said, "I do not see how a lorryman could suppose for a moment that the weighing machine would not carry the weight in any position he liked to put it. He is not a mechanic. . . . It is quite impossible to always get the lorry straight on the machine. Horses cannot be guided like machines. . . . They could not guarantee to get the weight properly on the machine with, say, a young and restless horse in the shafts."

Now in the face of this he tacks on to the recommendations of the jury the opinion that "it should be made impossible . . . for the wheels to get on the machine except in the proper position."

He has only just contended that you cannot guarantee such a proceeding, yet wants to have rules enforced for the execution of his admitted impossibility. Also, "if horses cannot be guided like machines," how must they be guided to make it "impossible" for the wheels to get on the machine

other than properly? We should say that under such circumstances they would have to be guided as precisely and mechanically as a tool in a slide-rest, and the Coroner says that cannot be.

We are quite sure he means well, but the public would be better served if his advocacy of public safety were a little less imperative and rather more logical.

ANOTHER HAIR-BRAINED SEWAGE SCHEME.

To judge by much of the correspondence in the daily papers, there evidently are many people who think the Manchester culvert scheme for disposing of the sewage effluent is a foolish and unnecessary proposal. In order to show how easy it is to go from the frying pan into the fire, it is interesting to give the following few particulars of a process for "preventing the pollution of rivers by all kinds of deleterious fluids," that has been devised by two worthy gentlemen, one of whom is an engineer.

The usual precipitation tanks are provided, only, one of them is kept dark "to form a home for microbes, which may be treated separately with fire at any time." The effluent is then run into wells sunk as deep as possible so as to reach a permeable substratum. The wells are lined until the percolating strata are reached, when the lining walls are perforated; and thus the effluent escapes and becomes completely purified. To prevent fungoid growths choking the perforations, catch-boxes are provided at the bottom of the well. The "percolation pores," we are told, "will never be seriously encumbered, as powerful and sharp pumping will restore it." (*sic.*)

A page later, however, great stress is laid on the previous removal of all "slimage" and the "reactionary pumping out of the shafts must be frequent." The sludge in the tanks and microbe home is heated by a "scorching spirit machine," conveyed on a light railway.

It is stated that the "chief novelty lies in going the whole depth into a permeable substratum." Nothing is said about the difficulty of finding suitable land; you only have to "select a few acres of land" and prove by levelling and boring "that they are elevated above all risks of floods, and that a substratum charged with the water, the bed of which gravitates away from the town," exists. Trifling conditions that no doubt exist anywhere, but having found them it would take 100 such wells 500 feet deep and 10 feet wide to accommodate the Manchester effluent. As they would have to be ready for refilling every 24 hours, we think it would take a lot of "sharp pumping" to restore them.

Lastly, for bad English and bland simplicity commend us to the following summary of the scheme:—"The truth and proof of its utility has been found by long study, recent experiments and confirmatory trials, which 'places' (*sic*) this compound invention beyond a possibility of doubt," and this only a few lines after expressly stating that the effluent must be sent into the wells free from turbidity, "or the whole will be a failure in a very little time." The originators of this scheme state that they are prepared to drink the effluent for the remainder of their lives. We think they would have so little to drink that they would soon be forced to quench their thirst in the contents of the "spirit machine."

DEVELOPMENTS IN THE ALKALI TRADE.

The feeling of disquietude and unrest that has characterised the heavy chemical market of late is not likely to find any immediate relief, if what we hear about the Hargreaves-Bird electrolytic process proves to be correct.

The syndicate that has charge of the process has come to the conclusion that such a stage of perfection has been

arrived at that it is time to put the process in operation on the large scale, and in consequence a company is in process of formation to acquire the British patent rights, and manufacture bleach and alkali. It is said that this Company will erect works in the Cheshire salt district, so it is not improbable that before long those at present engaged in the manufacture of these two articles will feel a further pinch of the shoe.

We may say that we recently had an opportunity of inspecting the experimental plant, and from what we saw are not surprised at the cheerful anticipations of the directors; but still, with things chemical, as in other matters, the old proverb that speaks of the slip between the cup and the lip, has a very general application. In expanding from the experimental to the manufacturing scale a great many difficulties are often met with that have hitherto insidiously hidden themselves; but we believe that the inventors and their collaborators have done their best to anticipate these pitfalls, by working their experimental plant far beyond the point at which the majority of inventors would imagine they had completed their task, and be prepared to hand over their offspring to a public foster mother.

ILLUSTRATED PATENT ABSTRACTS.

THE patent laws of this country make no provision for an official search as regards novelty, and all patents are taken out at the risk of the inventors. It is therefore incumbent on any person desiring to obtain a valid patent for an invention either to cause a search to be made, or himself to make a search, as to the novelty of his invention. By omitting such a search, many a patentee has found, after paying his fees, that his treasured patent is worthless, because it has been anticipated. Of course, in this case the first applicant or patentee possesses all the patent rights, and the second one has absolutely no right at all.

A complete and exhaustive search through published specifications of patents is a task of considerable difficulty, even for the trained expert, with all the resources of the Patent Office library, for at this moment the number of printed specifications of patents is well over a quarter of a million.

A series of indexes and abridgments has been published by the Patent Office, as a guide to the specifications themselves, and is freely distributed to the principal public libraries in this country. The abridgments give a general description of the nature of every invention patented, and the object of their publication is to enable the would-be patentee to carry out, at any rate, in some cases, what may be termed a *fireside search*. By the study of these abridgments he will generally be able to select certain inventions which have already been patented, and which resemble his own invention sufficiently to render it desirable for him to examine their specifications in detail. A printed copy of any specification can be obtained at an inclusive price of 8d., through any post office, by a special postcard (Patents Form C). The abridgments are published in volumes, each volume dealing with one particular class of inventions, such as "Steam engines," or "acids and salts," "sewage processes and manures," &c., for a period of some years. The volumes up to 1877 are not illustrated, and all the subjects have not yet been dealt with, but from 1877 onwards a systematic series, very fully illustrated, is now in course of publication at a uniform price of one shilling per volume (including inland postage). The volumes for the periods from 1877 to 1883 and from 1884 to 1888 have been completed, those for the periods from 1889 to 1892 and from 1893 to 1896 are in active preparation, and later volumes will follow in due course. For the purposes of the abridgments the whole field of invention has been divided into 146 "abridgment classes," and the list of these classes in itself shows what an enormous field this is, and how greatly its products vary. Every triumph of applied science, such as the locomotive, the telegraph, and the dynamo, is to be found here, and every one of our great national manufactures and industries finds its appointed place. Each volume contains abridged descriptions of the inventions falling under one of the 146 classes during the period of which it treats (illustrated by diagrams or drawings wherever possible), a detailed index to the inventions according to their subject-matter, and an index to the names of patentees or applicants.

For the use of those who desire to make a careful study of patents, the Patent Office also publishes an "Abridgment Class and Index Key" (price 1s., parcel postage 5d.), which shows in detail how inventions are classified, abridged, and indexed throughout its publications.

The Patent List.

List is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of E. Davis and Alfred R. Davis, who report professionally the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.
 Filtering Screen or Tank. B. Harlow. 22,662. October 4.
 Consuming Furnace. W. Rennie and W. Muir. 22,670. October 4.
 g Matters. A. Ashworth and J. Bürger. 22,677. October 4.
 ic Compounds from Petroleum. A. Adiasewich. 22,716. Oct. 4.
 Extinguishing Apparatus. E. B. Nunn. 22,749. October 4.
 Economizing Process. J. McCulloch. 22,771. October 5.
 cle for Shipping Chemicals. P. R. J. Willis. 22,777. October 5.
 Rating Sulphuric Acid and Apparatus therefor. I. Levenstein and
 stein, Ltd. 22,790. October 5.
 d Non-poisonous White Paint. L. Hunt. 22,792. October 5.
 ture of Soap. R. Holliday and Sons, Ltd., and T. Holliday. 22,810.
 ver 5.
 cid Condensers. J. V. Skoglund. 22,816. October 5.
 ture of Resinous Soap. F. Arledter. 22,862. October 5.
 roved Paint. H. L. Bates. 22,867. October 5.
 g Anti-incrustating Fluids. J. Kippax. 22,902. October 6.
 us for Treatment of Sewage. D. Cameron, F. J. Commin, and
 Martin. 22,905. October 6.
 Consuming Apparatus. A. Perkins and J. Wynn. 22,992. October 7.
 on of Ethylic Alcohol. B. J. Atterbury. 23,093. October 7.
 Consumers. C. Moisan. 23,016. October 7.
 ng Heat and Distilling in Chemical Processes. H. Higgins.
 l. October 7.
 Treatment. J. Grossman. 23,107. October 8.
 nd for Extinguishing Fires. A. J. Boulton. 23,126. October 8.
 ture of Blocks of Calcium Carbide. C. P. F. Desprez and E. A.
 int. 23,163. October 8.
 as for the Filtration of Sewage. A. J. Bell and P. A. G. Bell.
 l. October 9.
 d Tannin and Dyeing Preparations. T. H. Cobley. 23,194.
 ver 9.
 irect from Oleaginous Seeds. J. Monterrubio. 23,197. October 9.
 isting Material. D. G. Dow. 23,229. October 9.

TRACTS OF LATEST COMPLETE SPECIFICATIONS.

abstracts are specially prepared for the Chemical Trade Journal,
 RIGHTS of publication are RESERVED. This is the earliest
 abstracts of Chemical and allied patents accessible to the

ements in the Treatment of Zinc and Copper Ores. A. J. Boulton-garden, London (communicated by W. J. Koehler, B.Sc., Broken
 lub, Argent-street, Broken Hill, N.S.W.). Eng. Pat. 20,615. September
 96.

res are mixed with ammonium sulphate (either with or without
 ence of steam), and heated in a retort to 300° or 500° C. Zinc
 is formed and ammonia given off. Any copper present is also
 d into sulphate, and is precipitated by metallic zinc. The
 a given off is passed into a solution of zinc sulphate obtained
 revious batch, thus precipitating zinc hydrate and re-generating
 im sulphate. There are two figures showing the details of the
 retort and feeding hoppers, etc.

ture of a Substitute for Leather and the like, and Apparatus
 therein. L. de Banville, J. F. Rouleau and L. V. Rancelant, all of
 ue Blanche, Paris. Eng. Pat. 24,885. November 6, 1896.

havings of waste leather are incorporated with india-rubber,
 r having been dissolved in benzine to which a little alcohol has
 ded. Suitable pigments may be added to produce various
 is of leather. There are two drawings illustrating the rolling,
 and spreading apparatus, whereby the compound is caused to
 leather.

and Complete Mode of Permanently Protecting Rivers and
 mas generally from Pollution by Deleterious Fluids of all kinds.
 Humphris, Thame, Oxfordshire, and C. J. Plim, of the same place. Eng.
 29,409. December 22, 1896.

l is sunk in suitable land to a substratum in which are natural
 The wells are filled with the sewage after precipitation and
 nt in tanks; and is thus carried away and finally purified.
 re three figures. The full details of the process are set forth at
 gth. When necessary the wells are pumped out and cleansed.

ments in the Manufacture of Matches. J. Craveri, 420, Calle
 ano, Buenos Ayres. Eng. Pat. 18,563. August 10, 1897.

ad of phosphorus, a mixture of per-sulphocyanic acid, cyanogen
 ide, nitronaphthalene, xanthate of potassium, and charcoal is

used, which, with chlorate of potash or peroxide of lead, ignites by
 friction. The evils arising to workpeople in the manufacture of
 phosphorous matches, such as necrosis of the bones, are avoided. It
 is also claimed that the mixture is cheaper and goes further than an
 equal weight of the phosphorous tipping paste.

Improved Manufacture of Artificial Leather Substitute. A. J. Boulton,
 111, Hatton-garden, London (communicated by G. Brigalant, Barentin, France),
 Eng. Pat. 15,404. June 28, 1897.

Waste leather is finely shredded, and from 30 to 50 per cent. of
 hemp, flax, jute, or other fibrous material added. The whole is mixed
 into a paste, with the addition of animal or vegetable glue, which makes
 the material waterproof. The material is then rolled into sheets,
 either by hand or machinery. The finished product is called fibroleum.

PETROLEUM NOTES.

COMPETING WITH THE STANDARD OIL COMPANY.

In this prosaic nineteenth century it seems almost impossible to
 believe that during the twenty-two years previous to 1887 profits
 amounting to the enormous sum of £120,000,000. were made from
 petroleum and its products. Mr. Rockefeller (president of the Standard
 Oil Trust) alone became worth from £20,000,000. to £30,000,000.
 sterling out of petroleum. It seems, however, that the Standard Oil
 Trust is no longer going to retain the whole of the business itself, as the
 (British) Petroleum Oil Trust will compete with it, and, having the
 advantage of possessing high flash oils of good quality, should command
 the market. The Company has, in addition to its already vast proper-
 ties, within the past month obtained grants from the Canadian Govern-
 ment of mining rights over large plots of lands in the neighbourhood
 of Gaspé (C. T. J., 542, p 226), thus controlling practically the whole
 of the oil-bearing region.

SPRINGS ON FIRE.

A conflagration of great magnitude broke out on Monday night at one
 of the petroleum springs in the suburb of Romany, S. Russia. The
 flames spread with incredible rapidity, and neighbouring springs were
 quickly involved, until the entire valley resembled a sea of fire. Four
 naphtha springs and twenty-three bore holes, with several magazines and
 houses have been destroyed. The loss will be enormous. There is
 no mention of any loss of life.

END OF THE RUSSIAN CONVENTION.

The *Novosti* announces that the convention (which expired on the
 16th inst.) between the firms engaged in the naphtha industry, will not
 be renewed. The conference which was to have been held in St.
 Petersburg did not take place owing to the absence of the representa-
 tives of the Baku naphtha trade.

PRODUCTION.

In a circular to the shareholders the secretary of the European
 Petroleum Company reports:—"My directors think it would be a
 matter of interest to their shareholders to peruse the appended state-
 ment, showing the production of the company's wells at Baku.
 Speaking roughly, the profit made by the company may be taken at
 8s. per ton on the gross production given in the return.

Baku — Weekly production of wells.

	Poods.	Tons.
June 5, as per daily return,	136,300,	equal to 2,197
" 12, " "	137,775	" 2,221
" 19, " "	128,775	" 2,076
" 26, " "	124,275	" 2,002
July 3, " "	136,100	" 2,194
" 10, " "	136,650	" 2,203
" 17, " "	135,900	" 2,191
" 24, " "	141,050	" 2,274
" 31, " "	143,900	" 2,320
Aug. 7, " "	150,725	" 2,430
" 14, " "	155,430	" 2,506
" 21, " "	146,350	" 2,359
" 28, " "	156,812	" 2,528
Sept. 4, " "	152,673	" 2,461
" 11, " "	164,655	" 2,664
" 18, " "	156,012	" 2,515
" 25, " "	169,012	" 2,725
Oct 2, " "	177,362	" 2,859
" 9, " "	169,162	" 2,727

THE PRODUCTION OF SODA IN GERMANY.—*Handels. Museum*
 reports that the production of ammonia soda in Germany again
 increased in 1896. Two new factories were built. The total pro-
 duction of soda in the world is now estimated at 1,250,000 tons.
 Russia consumes about 2,000,000 poods of calcined soda, of which the
 Russian factories furnish about 1,800,000 poods, and about 200,000
 poods are imported.

Correspondence.

*. We do not hold ourselves responsible for the opinions expressed by our correspondents.

ELECTROLYTIC PHOSPHORUS.

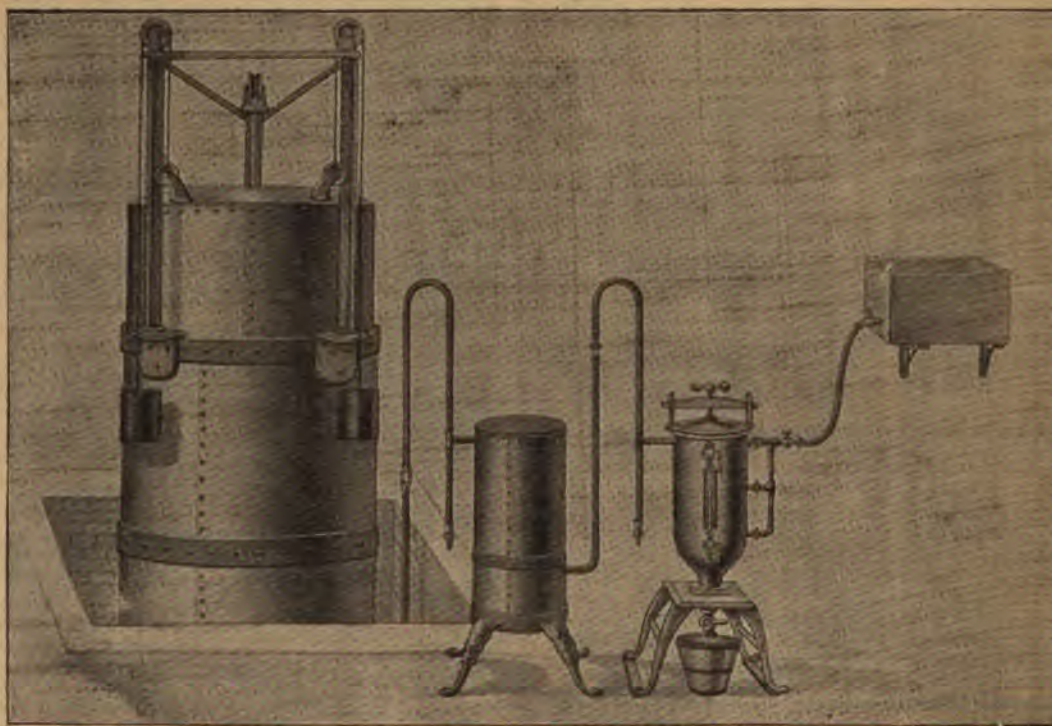
(To the Editor of the Chemical Trade Journal.)

SIR,—My attention has been called to a paragraph in this week's number of the *Chemical Trade Journal*, headed "The Electric Phosphorus Process," in which the method of manufacturing phosphorus by electricity is called the Allbright process. I beg to state that the process was invented and patented by me in October, 1888, in this country, and patents were shortly after obtained in America and elsewhere in my name, and that Messrs. Allbright have worked the process under licence only for some years.—I am, yours, etc.,
Edinburgh, Oct. 19, 1897.

J. B. READMAN, D.Sc.

THE "IDEAL" ACETYLENE GENERATOR.

THE subject of acetylene and its applicability for domestic purposes has within the last year or two become so prominent that no apology is needed for the present brief notice.



THE "IDEAL" ACETYLENE GENERATOR.

The Ideal Gas Co., Ltd., has wisely recognised the dangers that may attach to the automatic generator, and has devoted its energies to a *non-automatic* form of apparatus, a representative installation of which we show in the annexed cut. The generator is made entirely separate from the gasholder, and the relative sizes are so proportioned that the holder will contain and be filled by the gas products of one charge of carbide. The charging occupies from 10 to 15 minutes; overcharging is impossible, and the generator of gas can at any time be stopped immediately.

The apparatus is supplied by the Ideal Gas Co., of 3, Tackett-street, Blackburn, in four sizes, to supply 10, 20, 30, and 40 lights.

POLYPHASE ELECTRIC PLANT.—Messrs. Thomas Richardson and Sons, Ltd., Hartlepool, who are working in conjunction with Messrs. Brown, Boveri, and Co., the well-known electrical power engineers of Baden, have appointed Messrs. Geipel and Lange, of 68, Victoria-street, Westminster, as their London representatives. Messrs. Richardson's installation at Hartlepool is creating great interest in industrial circles, and we understand the firm has booked a large number of orders for Polyphase electric machinery.

Legal Intelligence.

CHESHIRE QUARTER SESSIONS.

DISTRICT COUNCILS AND THE CHEMICAL TRADE.

THE Court were engaged for some time hearing a case in which Davis's Chlorine Processes Company, Ltd., were the appellants and the Northwich Rural District Council the respondents, and the Chlorine Company appealed against a conviction of the 13th July, imposing a penalty for disobedience to an order made under the Public Health Act requiring them to abate a nuisance arising from the emission of black smoke at their works. Mr. Trevor Lloyd, for the appellants, took a preliminary objection that they had been convicted of an offence for which they were not summoned—viz., of having knowingly and wilfully acted contrary to an order of prohibition; further, that the Act only allowed a penalty of 10s. per day, whereas the magistrates had imposed a fine of 20s., and that therefore the conviction was bad.—Mr. Colt Williams held that the Court had power to amend the conviction by reducing the amount to 10s., but this the Court declined to allow, and they quashed the conviction, but without costs.

IRON-SMELTING IN IRELAND.—An experiment of an enterprising kind is shortly to be made in one of the congested districts of the Irish Western Highlands. In the neighbourhood of Drumkeerin, county Leitrim, bordering the shores of Lough Allen, a furnace is now in course of erection for smelting the native ore, and, so far as the preliminary trials have gone, the results have been reasonably satisfactory. The district is rich in minerals—that is, as compared with other parts of the island. The coal strata are the uppermost of the secondary deposits in the district, and are bedded on carboniferous limestone, which has for a base a tract of the old red sandstone. The coal is the black bituminous species, and it has been estimated that thirty millions of tons lie within the limits of the four counties of Leitrim, Roscommon, Sligo, and Mayo. Beds of ironstone are numerous; limestone for smelting has been quarried here before, and charcoal is obtained from the neighbouring woods. Nearly half a century ago ironworks were in operation here, but owing to the scarcity and unsuitability of fuel the smelting was discontinued, although the last iron made was of a high quality. To cope with this drawback, and to utilise turf fuel, a peat drying and pressing plant has been laid down. The success of the works will be productive of incalculable good to the peasantry in the vicinity, to whom regular and remunerative employment will be very welcome.

Reports of Companies.

EXTRACTION & BROMINE RECOVERY CO., LTD.

statutory meeting of this company was held last week at the offices, 18, Walbrook, E.C., Mr. E. Windsor Richards presiding in the absence, through illness, of Major Ricarde-Seaver.

I. R. Cassel (manager), in describing the process, said the object of the production of gold is in the treatment of low-grade refractory ores, of which the ever-increasing discoveries of telluride ores are only a type. The immense deposits of these ores in Western Australia, the United States, British Columbia, and other parts of the world are bringing more forcibly than ever to the attention of miners, metallurgists, and the investing public, the necessity of improved methods for their treatment. By means of our process we can treat telluride ores with absolute success, and obtain a higher extraction of the gold at less cost than any other existing method. In

Australia the scarcity and impurity of water is one of the drawbacks to the gold mining industry, and, until the quantity of water available for mining operations can be increased, the output will remain in a measure restricted. Our process can be carried out with a minimum amount of water (even when highly charged with slimes), as the solutions employed are continually used over and over again, the only waste being confined to that which remains as residue in the tailings. You have all heard or read of the large quantities of tailings and slimes accumulated about milling establishments in Australia, containing in some instances up to 2 oz. of gold to the ton.

These are the result of the present imperfect systems of treatment. By our process these accumulations, containing a vast amount of gold, are entirely obviated. We do not require to pulverise the ore to such a degree of fineness as is essential for the weaker solvent—cyanide of potassium. On the contrary, the treatment by us of large quantities of telluride ores in America has taught us that a coarser product is far preferable to fine crushing. The latter creates a fine residue of slimes, which impede the permeation of the solution, and also prevent the perfect washing out of the dissolved gold, and, moreover, require twice the quantity of water that coarsely-crushed ore does. The wear and tear of the machinery is much less when the ore is crushed to, say, 20-mesh (this being all that is required for our process) than if it were prepared for cyanide leaching of telluride ores, which requires double and treble that fineness. The consumption of cyanide, an expensive item in Western Australia, is consequently very much reduced. These advantages in a country like Western Australia are of great importance, and will not fail to be appreciated. Another great advantage which we claim over other processes is the ease and economy with which the gold is precipitated from the solutions. No other process can equal ours in this respect, and instead of obtaining gold as a precipitate fixed with zinc and other base metals, we obtain a precipitate of gold which only requires melting to be converted into fine bars.

The bullion obtained from the cyanide precipitate is very pure, and refiners make a deduction in buying it. In addition I mention that in the roasting of rich telluride ores small globules of metallic gold are formed which are so coarse as to resist the action of cyanide for a considerable time. By our process these are readily dissolved. In Western Australia the tellurides are of a much higher grade, and when roasted and subjected to cyanide a considerable loss will be sustained in the tailings. We claim at by our process these difficulties are obviated, and we claim a great economy in cost, inasmuch as the roasting, and treatment in a 50 ton per day mill do not exceed, under the conditions existing in Colorado, a total cost of £1. per ton. Coal costs £1. per ton and labour from 10s. to 12s.

The solvent which we employ in our solution is bromine. Attempts have hitherto been made to use it for metallurgical purposes; but none were successful, for the reason that its use involved a great loss, so that former experimenters were restricted to the use of insufficient quantities to obtain a perfect extraction of the gold. Our system involves the recovery of the bromine employed, with about 1 lb. of bromine to the ton of ore treated. One of the difficulties in a successful extraction of gold by cyanide is the presence of copper in the ore. We can treat ores containing gold and copper with perfect success at low cost, and save both metals. It will be the policy of this company to erect mills in well known mining districts, and also to grant licences under royalties or other arrangements, to subsidiary companies will be formed in the various countries where patents. These subsidiary companies will constitute a large source of revenue for the parent company. I have lately made a series of experiments on tellurides coming from the best known mines in Australia, and have left only traces of gold in the tailings. Ores from that region are admirably suited for our process. Our process has been examined by Mr. Fletcher Moulton, Q.C., and Mr. Gordon, who have reported that they are good and valid, and, therefore, fear nothing on that score. The apparatus

required is exceedingly simple, and with a very small outlay we can alter any existing cyanide mill to a bromine mill. The highly satisfactory reports of the experiments made at our works by the eminent experts, Sir William Crookes, F.R.S., Professor William Ramsay, F.R.S., Messrs. Johnson & Sons, chemists and assayers to the Bank of England, and the reports of well-known American metallurgists, all tend to prove that we have a most valuable process, which, in the majority of cases, is bound to supersede all others.

Mr. James Mactear (Pres. of Inst. Mining and Metallurgy) said he had submitted a very varied series of ores to treatment by the process at the works, and in practically every case the results had been exceedingly satisfactory. The only case that was at all doubtful was in regard to an ore which nobody as yet had been able to treat successfully, an ore containing large quantities of antimony carrying gold. The results obtained were better than anticipated. In the case of ordinary ores, even of the most refractory character, the results were exceedingly good.

THE KENT COALFIELDS SYNDICATE, LTD.

An extraordinary general meeting of the shareholders of this Syndicate, Ltd. was held this week at Cannon-street Hotel, E.C., Mr. G. F. Fry (the chairman) presiding.

Mr. Simpson (the engineer) said that the Brady Shaft, which was 17 ft. in diameter, and which was at present the deeper shaft of the two that had been sunk, had now attained a depth of 512 ft. and was bricked to a depth of 480 ft. The remaining 32 ft. was lined with timber and railings, which would be taken out as they bricked down. They had been sinking at the rate of 4 ft. per day, but the progress had been slow for the last fortnight on account of the water they had had to contend with, which amounted to 20,000 gallons per hour. They had now reached the bed from which the water was coming—in fact, were 2 ft. below it—and they hoped to continue dry sinking. At present they were in what was called the Hastings series of beds, where they met with water in the conglomerate, and also some beds of lignite and a little bit of coal as well. The Simpson pit was now sunk to a depth of 330 ft., and had been bricked from top to bottom. It was at present being used as a reservoir for pumping the water from the Brady Shaft until they had a means of putting a tank at the bottom of the pit to collect the whole of the water. This month he hoped they would be sinking in both shafts continuously. The total quantity of water from both shafts was about 60,000 gallons per hour; but they had pumps on the ground capable of dealing with double that quantity if necessary. In the course of another two or three months they would take out the present pumps and put in permanent ones in the Simpson pit in order to deal with the whole of the water from one point. The water question, therefore, presented no difficulty whatever.

Mr. Hood asked if Mr. Simpson could state approximately when they would reach the coal.

Mr. Simpson said he did not like to prophesy, but unless something unforeseen occurred he did not see why they should not reach the coal about April or May next year.

PERCARBONATE OF POTASSIUM.

POTASSIUM percarbonate is obtained by electrolysis of a concentrated solution of potassium carbonate at a low temperature. The clear solution in the neighbourhood of the anode becomes milky, owing to the separation of percarbonate, and by filtering off, a salt of sky-blue colour is obtained. This is potassium percarbonate, containing a few per cent. of potassium carbonate as an impurity. Further experiments have lately been made to ascertain the best conditions for successful preparation. The electrolysis was carried out in a porous cell of 200 cc. capacity, placed in a beaker of such size that the outer cell gave about 120 cc. as anode space. The anode was a platinum spiral, the cathode of sheet nickel.

1. *Influence of Temperature.*—If the electrolysis is started at about 15°C., small variations of temperature have but little effect on the yield, provided the anode liquid is kept concentrated. The temperature may even rise to 60 degs. without much effect upon the reaction. But if the specific gravity of the potash solution fall below 1.52, the yield diminishes rapidly as the temperature rises. Thus the temperature should be kept low towards the end of the reaction, when the solution has become weaker owing to separation of percarbonate.

2. *Influence of Concentration.*—If the concentration of the anode liquid drop even slightly below the saturation point, little or no percarbonate is obtained, for the substance is extremely soluble in dilute solutions. Furthermore, in dilute solutions potassium bicarbonate is produced and forms the greater part of the crystalline precipitate obtained.

3. *Influence of Current Density.*—A high current-density is of the greatest importance, otherwise much bicarbonate is formed. Finally the author recommends that special care should be taken to ensure high current-density and concentration of the solution; the employment

of temperatures as low as 10 deg. and below is not necessary if the solution be always kept saturated. A saturated solution of pure potash at ordinary temperatures has a sp. gr. of 1.555 or 1.556, and it is a remarkable fact that such a solution exhibits no tendency to crystallise out when its temperature is lowered. On the other hand, a concentrated solution of commercial potash rapidly deposits crystals when it is cooled a few degrees below zero. In order to prevent the separation of crystals inside the porous cell, it is well to use as the cathode liquid a less concentrated solution. The method above described is not well adapted for preparing percarbonate in quantity; for this purpose the following modification is recommended.

The outer vessel is provided with an outflow tube at a level just below the rim of the porous cell. As the electrolysis proceeds, and in proportion to the amount of percarbonate formed, fresh solution is introduced into the lower part of the anode space by means of a funnel. The specific gravity of the electrolysed fluid is less than that of the fresh potash solution; hence the two do not mix. The solution containing the percarbonate rises and flows away through the outlet, and is at once filtered. The yield per ampere-hour is from 2.2 to 2.4 grms. of solid salt containing 87 to 93 per cent. of percarbonate. After all adhering liquid is pumped away, and the salt is spread on a porous plate and dried in a current of dry air. This works much more rapidly than drying in a desiccator. Towards the end of the operation the air can be heated to about 40°; above this decomposition sets in. The salt thus prepared is an amorphous powder with a slightly blue colour. The pronounced blue colour of the moist salt disappears almost entirely on drying. It is easily decomposed, yielding up oxygen to oxidisable bodies. But it is not so unstable as was at first supposed. In order to decompose it in a short time by heating, a temperature of 200° to 300° is requisite. On immersion in water it only slowly decomposes at ordinary temperatures. But at somewhat higher temperatures it rapidly decomposes with evolution of oxygen; in fact, it is a convenient laboratory source for preparing pure oxygen. The salt has only to be placed in water and warmed to about 45°; a very steady current of oxygen then comes off. The reaction goes on of itself without need of any further heating, and scarcely a trace of percarbonate is left. One hundred grms. of the salt give about 5 litres of oxygen. In order to retain any carbon dioxide that may be developed, soda is added to the water.

Like the peroxides of sodium, barium, and hydrogen, it can be used as an oxidizing agent. By adding it to diluted acids a more or less concentrated solution of hydrogen peroxide is obtained. If an excess of acid be present the solution keeps well. The dry percarbonate keeps very well and is a convenient source for rapidly preparing a solution of hydrogen peroxide. Potassium percarbonate cannot be crystallised from its aqueous solution. If water at 0 deg. be saturated with it and then cooled to -15 deg., a rich crop of crystals separates out, but these consist mainly of ice. It is, however, only slightly soluble in alcohol; and by making use of this property it can be purified as follows:—An excess of the salt is added to a strong solution of caustic alkali and is digested with it for some time at -5 deg. to -10 deg. The bicarbonate contained in the salt is decomposed by the alkali. The potash produced goes into solution and, after filtering, we obtain percarbonate containing only a small quantity of caustic alkali as impurity. By treatment with absolute alcohol this is removed and a product containing 95 to 99 per cent. of percarbonate is obtained. The author has not succeeded in preparing the sodium or ammonium salt of percarbonic acid.—*Zeit. für Electro Chem.*

Obituary.—The death is announced of Alderman A. Dyson, of Flint. The deceased was a magistrate and an ex-mayor of the borough, Chairman of the Flint Gas and Water Company, and manager of the United Alkali Company's works.

THE TECHNICAL DEFINITION OF KAOLIN.—The *Engineering and Mining Journal* thus enlightens its readers in a recent editorial paragraph:—There is a good deal of confusion in the use of the terms "kaolin" and "china clay," which are often employed in technical publications as if they were interchangeable. Kaolin is mineralogically a simple hydrous silicate of aluminum, which is indeed practically the composition of china clay. Kaolin is seldom found pure, however, and it is usually necessary to subject it to some kind of mechanical treatment to free it from the impurities which would be objectionable in pottery making, for which purpose by far the greater part of the production is employed. In the principal American deposits the yield of the clean material is only about 33 per cent. of that which is dug. In the industry the term kaolin is used to designate the crude material, while the finished product is referred to as china clay. This use of the term may not be justified mineralogically or linguistically, but since it has become established in the trade it is better to refer to the finished product as "china clay" and not as "kaolin," which of course leads to more or less confusion. Our smart cousins are not always "right along away ahead" of us, if this is news to them.

TECHNICAL EDUCATION IN GERMANY.

[SPECIALLY CONTRIBUTED.]

THE report recently presented to the Manchester City Council on some of the German Technical Schools (*C.T.J.* 541, p. 210) is very interesting reading, but, it is to be feared that through this report and others of a similar character, a wrong impression may be conveyed as to the exact condition of technical education, as a whole, in Germany. [It must be borne in mind that in Germany there is no universal system of science, art, and technical education similar to that fostered in this country by the Department of Science and Art, and the City and Guilds of London Institute.] In this country there are few towns, however small they may be, without their technical school, or at least science and art classes, whereas artisan students may receive sound instruction in the science or art of his trade. In Germany, however, there are many large towns, such as Elberfeld, Düsseldorf, Worms or Mannheim, that are without any technical school whatever, while in many other towns, as for instance Cologne, Muhlheim-am-Rhine, and Frankfurt-am-Main, the schools are small. Moreover, all the smaller towns have no schools or institutes where artisans can obtain instruction in science, art or technology. Here we have an advantage over the Germans; and it may be unhesitatingly asserted that the average English workman has a better knowledge of the technology of his trade than the average German artisan.

The German technical schools have benefited but few German industries, and with those that have it is because the firms engaged in them have had wit enough to know how best to take advantage of the teaching given in such schools. In this country the masters think that if they subscribe a few pounds to establish and maintain a technical school, they have done all that is needed, but it is not enough; if they are in the chemical trades they ought to take the specialists the schools produce and employ them to develop new processes and discover new products; if they are textile manufacturers they should see that they take trained students and encourage them to devise new fabrics and new effects. The German colour makers and textile manufacturers have done so with good results; but there are other trades in Germany in which German technical schools seem to have had no effect, because the masters engaged in these trades have not sought the help of the schools in the proper way.

The technical schools at Dresden and Charlottenberg are very fine, but just as one swallow does not make a summer, so one school in a large district does not do much to promote the welfare of that district, because all those who might benefit by the establishment of the school are unable, for various reasons, to attend it. The English system with its many schools (small though they be and hampered by the disadvantages which small schools must possess), is to be preferred to the German system of one large school to provide for a wide area.

THE BRITISH STEEL INDUSTRY.

ONE of the few gleams of sunshine that have appeared of late in the industrial horizon is afforded by the publication of the returns of the output of steel in this country during the first six months of the current year. These returns, as collected from manufacturers by the British Iron Trade Association, show that the total output of both Bessemer and open hearth steel for the six months has amounted to 2,350,927 tons, which is at the rate of 4,701,854 tons per annum. This is by far the largest quantity of steel that has ever been produced in our own or any other European country during a similar period, although in the United States more than six million tons of steel have been produced in 12 months. As compared with the first six months of 1896, the total increase of output of both descriptions of steel has been 381,616 tons, which is at the rate of 763,232 tons per annum. Of the total increase stated, 289,979 tons appertain to open hearth and 91,637 tons to Bessemer steel. Indeed, by far the most interesting feature of the statistics is the fact that they demonstrate the growing importance of open hearth and the diminishing relative value of Bessemer steel. The Bessemer process, as is generally known, had a ten years' start of the open hearth system, for which we are indebted to the late Sir William Siemens. During that period the Bessemer process had become firmly established as the process of excellence for the production of cheap steel, so that when the rival system entered the field it had to fight hard for its position. In 1877 the make of Bessemer steel had reached 750,000 tons, while the make of open hearth steel was not more than one-fifth of that quantity. In 1894 both processes were running, for the first time, a neck-to-neck race, and to-day the open hearth system has completely asserted its supremacy, the quantity produced in the first half of the current year being nearly 40 per cent. in excess of the output of Bessemer material. The natural cause and consequence of this condition of affairs may be traced in the extraordinary rapid development of the open hearth steel industry in the principal industrial centres of the country. This branch

established in South Wales, and afterwards begun in is now carried on in Sheffield, Leeds, the Midlands, North heshire, Lancashire, Durham, Cleveland, and other localities. centres of production are Scotland and Cleveland, which have ing a close race for several years past, with the lead at present of Cleveland. But the trade has witnessed remarkable in other districts as well.

It is naturally to be expected that the large and rapid growth of the trade would be a function of the corresponding decline of the old or wrought iron manufacture, with which South Wales, Lancashire, Shropshire, Sussex, and West Yorkshire have been identified for generations, and of which we find large and ample in the gateways, railings, and other old iron structures met every step of our wanderings in London and elsewhere. The old iron trade, however, still survives, and in some districts, in Scotland, is as vigorous and important as ever. It is otherwise in Cleveland, South Wales, and to a large extent in the Midlands, where steel has rapidly been displacing iron within recent years, and is anxious to do so. But steel has found fields of its own entirely distinct from those held by the rival material whose position it has so completely supplanted. Perhaps the best evidence of this is furnished by the fact that the total make of finished material for the current year will be in the neighbourhood of six million tons, whereas some twenty years ago it did not exceed one-half of that quantity. This great development has been brought about chiefly by the extension of industrial centres generally, but also, in no small degree, by the great excellence and the cheapening of cost. Within that period prices have fluctuated so largely that in one case within the knowledge of the writer the steel rails were being supplied by the same firm at the same time for one customer for £11. and to another for £4. 15s. per ton, the former representing an earlier contract of three years' standing. The price of steel has been reduced by fully one-half within a comparatively few years. Both Bessemer and open hearth steel ingots can now be made for between £3. and £4. per ton, and practically at the same price. One of the main sources of the improvement in the steel trade has been the greatly increased demand for shipbuilding material. The quantity of shipbuilding constructed in the United Kingdom is now about 1½ million tons, or about twice as much as it was 20 years ago. Not only so, but within the same period we have largely supplanted shipbuilding material of other countries, including Germany, and export business. It is true that Continental countries have made special efforts to secure to themselves the supply of all the materials of construction, and some of them have been very successful in this direction; but Great Britain still remains as ever the leading country for shipbuilding iron and steel, as for the industries in which these materials are so largely employed.

Only a few years since the price of ship-plates, made by the open process, was £10. to £12. per ton. For the last two years, the price has fluctuated between £5. and £6., and yet some firms have made at least as large profits at the lower price as were possible at the higher. This result has been accomplished mainly by economies in the methods of which the output of a larger yield from a given plant. The methods of handling the material has not been the least. Larger furnaces have also been responsible for a good deal. Twenty years ago we had few furnaces of more than ten tons capacity. We have many furnaces of 40 to 50 tons. An output of 12,000 tons of furnace per annum is not now uncommon where an output of 10,000 tons would have been deemed remarkable in 1877. In other respects, and not least so in providing heavier and more powerful machinery for rolling steel plates of the largest size, as well as many other things, the conditions have been greatly altered. Nor need we feel satisfied with the fact that, whatever may be our position in the branches of manufacture, we are far ahead of any other country both in the practice and in the production of our open hearth steel. It is to this fact, perhaps, as much as to the long and well-earned reputation of our shipbuilders, that we owe the present unique position of our shipbuilding industry.—*Times*.

RIBBLE JOINT COMMITTEE.

The first meeting of this committee, since the vacation, was held at Preston on Monday last week, Mr. T. Fair being in the chair.

THE COMMITTEE AND LOCAL AUTHORITIES.

The Chief Inspector reported as follows:—The Darwen Town Council writes saying: With reference to your letter of 24th inst. enclosing extract from the chief inspector's report to the Ribble Joint Committee, and requesting a reply, I beg to state that the borough surveyor informs me that, in order to meet the chief inspector's requirements by making further provision for sand washing in connection with the settling tanks and filters, he is laying out an area of an acre of land with under-drainage, &c., which will

obviate any cause of complaint on this account. Respecting the chief inspector's remark that the precipitation tanks are not being used to the best advantage, and as to what he states about the purity of our main effluent, the surveyor states that such effluent is quite equal to, if it does not surpass, that of other sanitary authorities, as will be seen by the comparison given in the figures of your own report, and he states that certainly the corporation effluent is far purer and superior in every respect to the state of the river water into which it is emptied. In connection with the above letter, although the case of Darwen sewage works does not come up for consideration on Monday next, I have to report that on the 9th of September, at 9 p.m., it was found that tank effluent was entering the river instead of being submitted to filtration. It was of a polluting character. Walton-le-Dale Urban District Council also wrote to say:—Your letter herein of the 24th ult., along with a copy of Mr. Naylor's report, was placed before and considered by the Council. My Council felt much surprised that their action at these works called for any such report from your inspector, having regard to the high standard of purity of the effluent as discharged into the River Ribble. I am to state that the Council cannot admit that they are in any way defaulters, but, assuming them to be so, they think that what they have done and are doing in this direction should meet with a more favourable construction by the Joint Committee, and a more reasonable treatment at the hands of their officials. In reply the Chief Inspector said:—I regret that my report (page 183, Proc. R.J.C.) should have given rise to any feeling of resentment. I have gathered from the action of this committee in the past that its desire is to prevent the pollution of rivers, and not to be continually instituting proceedings after offences have been committed. This being the case I have considered it just as much my duty to report negligent management, lack of proper facilities for dealing with sewage or manufacturers' waste, or even absurd or extravagant expenditure, as cases of actual pollution. In the case of Walton-le-Dale sewage works there is no doubt but what owing to the lack of proper facilities for dealing with the sludge, one of three things must shortly arise, viz., a polluting effluent, nuisance, or extravagant expenditure in maintenance.

SEWAGE FARM VAGARIES.

In reference to the Ormskirk Urban District Council and their sewage farm, the chief inspector reported:—"It is probable that if the tank effluent had been distributed over the special filters only, and not over the farm, good results would have accrued without interruption; but unfortunately the farm is sub-let, and the authority has no voice in the matter of sewage distribution. On the date of my last visit (September 20th), the whole of the tank effluent was being conducted by the farmer past the filter beds and away to the lower end of the farm for distribution over about one-half of a field three or four acres in extent. This small tract of land was naturally swamped, and to avoid further swamping a grip had been cut, permitting of free communication with the natural stream. At this point the sample was taken. Two of the filters, being cropped with turnips and beans, have not been under sewage for some months. This, to the best of my belief, is the only sewage farm now in the valley sub-let."

The Chairman remarked that there seemed here to be a difficulty about letting the land. It was only natural that the farmers should consider their own convenience rather than the disposal of the sewage. It was agreed to further adjourn the matter for two months.

The Chief Inspector reported, in reference to Wigan borough, that the treatment of sewage at the Wigan Farm had suffered, as usual, during the harvest. On visiting the farm on the 15th of August, it was found that the filters had been swamped with sewage, so as to allow the corn to dry, and what sewage they were incapable of dealing with in this way was allowed to go into the river Douglas without treatment. It might be pointed out to the Wigan Sewerage Committee that if it still considered it advisable to preserve crops, special arrangements ought to be made for dealing with the sewage on such occasions as this.

TRYING EXPERIMENTS AT BLACKBURN.

The Chief Inspector reported, in reference to Blackburn, that the case was adjourned in July last for three months to permit of special experiments being made with coke filters. Nothing had been done in the way of constructing the filter for any such purposes, and the tank effluent continued normal.

The Deputy Clerk read a letter from Blackburn stating that since the date upon which the deputation appeared before the committee, experiments had been carried on by Mr. Dibden, of the London County Council, to see whether the bacterial system could be adopted there, and he had expressed an opinion in the affirmative, but suggested that before a final step were taken further experiments should be made to see whether it answered. The authority had decided to act on that advice, and asked the committee for further time.

The Chairman said that under the circumstances it was only reasonable to allow them time. He thought if they gave them another two or three months the committee should hear from them again.

RELATING TO MANUFACTURERS.

With reference to Messrs. Grafton and Co., the Inspector said the firm had done a great deal in putting down plant, but, unfortunately, they had not succeeded in getting a sufficiently satisfactory effluent. He had suggested precipitants, but they proposed not to use precipitants, on the ground of expense. The question was whether they had gone far enough or not, and whether they should be compelled to go further.

Mr. Burrows: How do they compare with others?

The Inspector: They don't compare very favourably with other effluents.

Mr. Kendal (of the deputation) said the firm could not see how other firms could get better results. They were not more loyal in their endeavours, nor did they appear to spend more money. Messrs. Grafton did not put their clear water into the tanks, or that would further dilute the contents of the tanks.

An adjournment for three months was granted.

In reference to the Burnley Paper Company, it was pointed out that little progress had been made, as it seemed that they were disposed to play with the matter, and it was decided that summonses should be issued at once.

With reference to Peebles & Son, Ltd., Whiteash Paper Mill, a letter had been received from the firm's solicitors stating that the Local Government Board intended to direct a local inquiry into the firm's complaint that the local authority had made default in providing the district of Rishton with sufficient to take their effluent, thus, in fact, admitting that the firm had the right which the Local Government Board had until now repudiated.

The Clerk said that if the Local Government Board were really going to hold an inquiry it was advisable that the committee should adjourn the matter.

It was decided to let the case stand over for four months.

The cases of several other manufacturing firms were adjourned.

Trade Notes.

SOCIETY OF CHEMICAL INDUSTRY.—Liverpool Section.—The first meeting of the session 1897-98 will be held in the theatre of the chemical laboratories, University College, on Wednesday, Oct. 27, 1897, when the chairman will deliver an address on "The Manufacture and Properties of Carborundum." Tea and coffee will be served in the museum from 7 to 7-30 p.m. The business of the meeting will begin at 7-30.

SOCIETY OF CHEMICAL INDUSTRY.—Nottingham Section.—The first meeting of the Session 1897-8 will be held on Wednesday, October 27th, 1897, in Room No. 23, University College, Nottingham, at 7 p.m., when a paper on "Nitrate of soda in iron metallurgy" will be read by Mr. F. J. R. Carulla, F.C.S.

THE GOLDSMITHS' INSTITUTE, NEW CROSS.—A course of 25 lectures on "Coal Tar Distillation" will be given by Mr. William Jackson Pope (Medallist in Coal Tar Products), commencing on Wednesday, October 27th, 1897. The fee for the course is five shillings. The Provisional Syllabus is as follows:—Determination of boiling point and the relation between pressure and boiling point; vapour tension of liquids, and methods of determining and expressing vapour tension. Theory and practice of fractional and steam distillation. Latent heat of vapours, and specific heat of liquids. Calculations respecting the fuel required for heating, and the water supplied to condensers. Determination of specific gravity and its application to the analysis of coal-tar oils. Composition and valuation of tars; causes affecting composition. Treatment of tar preceding distillation. Plant and methods used in tar distillation. Composition of light and heavy naphtha, etc., obtained by the first distillation of tar. Composition and analysis of organic compounds. Separation and purification of benzene, toluene, xylene, etc., and the plant employed by manufacturers. Composition and valuation of commercial benzol, etc. Thiophene. Phenol and cresol, their preparation and properties. The preparation and uses of naphthalene, anthracene, and other solid hydrocarbons present in the tar distillates. Carbazole, pyridine, etc. Methods for final purification of coal tar products. Solubility. Selection of solvents. Determination of melting points. Other criteria of purity. Application of coal tar products in creosoting; preparation of lamp-black, varnishes, lacquers, and patent fuels. Treatment of gas liquor. Ammonia salts; their preparation and valuation. Treatment of bye-products from coke-ovens. Special attention will be paid to the methods of analyses and to the plant used both in this country and abroad. The course will be fully illustrated with the aid of experiments and the optical lantern.

THE END OF THE NITRATE COMBINE.—In accordance with our forecast in the *Journal*, 541, p. 209, the Permutate Nitrate Committee has received telegraphic advice from Iquique that the Directorate of the Nitrate Association on the 16th inst. declared the Nitrate Combination to be broken in the terms of the agreement.

WATER GAS AT STOCKPORT.—The Stockport Trades Council has strongly opposed the introduction of carburetted water gas into the borough, on the ground that it would be detrimental to the health of persons employed in the gassing department of cotton doubling mills, and also of those engaged in the manufacture of this gas. On the latter point they addressed a letter to the Town Clerk. This communication was handed to Mr. S. Meunier, engineer and manager of the corporation gasworks, and he has replied as follows: "The risk to which the men are exposed in the manufacture of carburetted water gas are certainly not greater, if as great, as those incurred by the ordinary gas workers. The usual precautions are taken with this portion of the works as are taken with any other, and are certainly considered to be amply sufficient. I may say that the men themselves have never complained, nor is there any reason to suppose that they have any cause for complaint."

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols are fairly steady, 90's standing at 2s. for prompt and Nov.-Dec. 1s. 11d. For 50/90's 2s. still holds good. Carbolic acids are about the same, with the exception of crystals (40%), which are now quoted 6½d. Naphthas are firm, 1s. 7d. for solvent and 10d. for crude. Anthracene is a trifle firmer, though prices remain 5½d. for 30% A and 4d. to 4½d. for B. Pitch is dull, and the outlook is not very encouraging. Value f.o.b. East Coast is 20s. 6d.

Sulphate of ammonia has been in good demand. Second-hand parcels have been cleared, and dealers seem more anxious to buy. The price has, in consequence, picked up again with the close of the week. For November-March, Beckton price is £8. 5s., London outside makes £8. 2s. 6d. to £8. 5s. prompt, Liverpool £8. 3s. 9d. to £8. 5s., Hull £8. 2s. 6d., and Leith £8. 2s. 6d.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade prices all round remain steady, and a fair amount of business is being done both for home and export. Bleaching powder is in better request and prices are firm at £6. 10s. to £6. 12s. 6d. hardwood, f.o.b., and £6. to £6. 5s. f.o.r., according to make. In caustic soda prices are firm and without change, either for prompt or forward supplies. Current quotations are as follows:—F.o.b. Liverpool, 77% £8. 10s., 74% £8. 2s. 6d., 70% £7. 7s. 6d., 60% £6. 7s. 6d. nett, 10 ton lots. Leblanc soda ash nominal, at 1¼d. f.o.b.; alkali, 58%, bags, £3. 17s. 6d. f.o.r. Soda crystals and bicarbonate unchanged. Chlorate of potash, 3¼d. Soda 4½d. per lb. Saltcake steady at 19s., f.o.r. in bulk. Recovered sulphur, £4 12s. 6d. per ton. Sulphate of copper remains at £16. 10s. prompt, and £16. 15s. to £17 forward delivery. Brown acetate of lime firm, and with rising tendency, at £5 7s. 6d., c.i.f. Grey nominally, £7. 15s. White sugar of lead firm at £23. Acetate of soda lower. Acetic acid without improvement owing to the excessive competition. Potash, caustic and carbonate have a slightly easier tendency. Yellow prussiate of potash firm at 5¼d. Cyanide, 10¼d. Arsenic firmer at £21. 15s. to £22. Aniline oil and salt are quoted at lower rates for forward delivery. Carbolic crystals are also lower and trade quiet.

REPORT ON MANURE MATERIAL.

The market continues quiet, without any important change in values. Quotations for mineral phosphates are unchanged, and no important fresh business is reported.

Sales of East Indian bone meal have been made to the East Coast at £3. 15s. per ton for fine quality, but this price has since been refused and shippers are now asking considerably more money. On spot crushed Kurrahee bones offer at £3 17s. 6d. per ton. A parcel of West Coast rough bones is reported sold at £3 13s. 9d. per ton, ex quay.

Nitrate of soda is a shade firmer, but there are still sellers of good quality at 7s. 4¼d. up to 7s. 6d. per cwt. for fine.

There is still good inquiry for miscellaneous nitrogenous material, but prices now asked hinder business.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron: Scotch warrants closed at 45s. 1½d.; Middlesbro', 42s. 3d. cash; and hematite, 47s. 9½d. Copper firm: Chili bars, G.O.B.'s and G.M.B.'s, closed at £48. 2s. 6d. to £48. 7s. 6d. cash, and £48. 8s. 9d. to £48. 13s. 9d. three months. Tin steady: Straits closed at £63. 1s. 3d. to £63. 11s. 3d. cash, and £63. 13s. 9d. to £64. 3s. 9d. three months; Australian, £64; English ingots, £66. 10s. Lead quiet; Spanish, £13. 10s.; English, £13. 15s.; Silesian spelter, ordinary, £17. 15s. Nickel, 1s. 2½d. Antimony, £29. 10s. Quicksilver: First hands, £6. 14s. 6d.; second hands, £6. 15s. 0d. Copper shares quiet: Cape, 2¼ to 2¾; Copiapo, 1¼ to 2; Libiola, 2½ to 2¾; Mason and Barry, 2½ to 3½; Rio Tinto, 24½ to 24¾; Tharsis, 6¼ to 6½.

GLASGOW, WEDNESDAY.—Market strong, and a good business. Scotch done at 45s. 0d. to 45s. 1½d. cash; and 45s. 2½d. to 45s. 3½d. one month; buyers, 45s. 1½d. cash; sellers, 45s. 2d. Cleveland, buyers, 42s. 3d. cash; sellers, 42s. 5d. Cumberland hematite done at 47s. 9d. cash, and 48s. one month; buyers, 47s. 9½d. cash; sellers, 47s. 10d. Middlesbrough hematite, buyers, 49s. 3d. cash; sellers, 49s. 9d.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is quiet, and is not moving very freely. Small sales have been made in Lagos. Olive keeps strong, with a fair business doing in Seville at £31. 10s. Candia is now held for £32. per tun. Linseed dull, Liverpool makes being quoted 15s. 9d. to 17s. 6d. in export barrels. Cottonseed is also easy at 15s. 6d. to 16s. 6d. cwt. Castor oil keeps steady, with good seconds Calcutta 31½d. and first pressure French 3½d. per lb. Tallow is firmer, and buyers are more inclined to do business. Resin in fair demand at 4s. 3d. for common, 4s. 6d. to 5s. 6d. medium, and 6s. 6d. to 7s. 6d. cwt. for fine. Spirits of turpentine are quiet at 24s. 9d. cwt. on spot. Petroleum dull, with prices nominal at 5d. for Russian and 5½d. to 7d. per gallon for American.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire—common £10., medium £12., best £15.; Derbyshire—common 40s., medium 50s., best 60s.; Welsh—best 90s., seconds 50s., and common 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead: £16. Red lead unchanged. Venetian red: £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide: £22. 10s. to £25.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—Trade here holds out very little prospect of any near brilliant development. There is plenty of seed offering for immediate requirements. The imports to date have been against the same period a year ago. Linseed, 510,297 quarters, against 652,124 quarters; rapeseed, 66,193 quarters, against 73,166 quarters; cottonseed, 142,087 tons, against 115,943 tons. Oilcake, 7,903 tons, against 10,044 tons. Olive oil, 3,498 tons, against 4,927 tons. Tar, 13,330 barrels, against 18,150 barrels. Linseed oil of slow sale and easier, quoted spot, 13s. 10½d.; December, 14s.; and first four months, 14s. 9d.; sellers—refined and boiled, £1 to £1 10s. per ton extra. Refined cotton oil very flat: spot, 13s.; naked, forward November-April, 13s. 1½d.; sellers, filtered refined, £1 to £1 5s. per ton extra. Crude old seed: spot, 11s. 6d. sold; ordinary casks £1, and barrels £1 10s. per ton extra. Olive oil quiet, prices unchanged. Turpentine, 24s. 6d. to 24s. 9d. Rape and Colza oils unchanged. Castor oil, best makes, 4d. per lb. Oleines unchanged. Cod oil from 15s. 6d. to 18s. per cwt. Olive oil soaps from £16 per ton, to arrive. Stockholm tar, 22s. 6d. per barrel. Danish butter, 108s. to 112s. per cwt.; Dutch, 95s. to 98s.; Canadian, 95s. to 105s.; Irish, 75s. to 100s. per cwt.

CAKES.—Market and demand quiet for some kinds. Linseed cakes are a firm market 95%; pure, £7. 12s. 6d. to £7. 15s. Oilcakes, £6. 12s. 6d. to £6. 15s.; Russians from £7. 5s.; Americans, for November delivery, £6. 15s. Cotton cakes steady: best makes, spot, £4. 5s.; November, £4. 2s. 6d.; December-April, £4. Rape cakes: None making.

PAINTS.—Trade and demand little changed. Mineral dry colours from £3 10s. to £8. White and red leads are firm and unchanged. Patent dryers, 12s. per cwt. up. Paint remover, 25s. per cwt. Ultramarine from 4d. per lb. Bleaching blue, 1s. per lb. Colours in water, 3d.; in turps, from 4d. Black varnish, £5. 10s. per ton in barrels; oak varnish, from 5s. per gallon.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Soda crystals are still found in demand and scarce, and some makers are asking a further rise for export. The press just now is

merely for the saving of the last of the inland navigation routes on the continent before the ice sets in. In caustic sodas the feeling seems to be rather to the weaker side, and the quotation is down a shade on some of the lists. Saltcake is rather firmer, justifying a slightly higher figure as the quotation. Borax is, if anything, a little stronger. The market for sulphate of ammonia has become somewhat listless, although without anything of giving way so far as the prices asked are concerned, these still affecting the immediate neighbourhood of £8. upward, for prompt Leith. The forward market is a blank, buyers refusing to entertain the figures given by the makers. In mineral oils and paraffins the position is unchanged.

Chief prices current are:—Soda crystals, £2. 12s. 6d. to £3. nett, Tyne, soda ash, 48/62°, £4. 2s. 6d. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £4. 17s. 6d. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 5s., 70/72° £7. 7s. 6d., 60/62° £6. 7s. 6d., cream 60/62° £6. 2s. 6d. all nett, Liverpool; bleaching powder, 35/37°, £6. 5s. nett, Tyne; saltcake, 19s. to 20s.; borax, English, refined, £15., and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3½d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4d. less 5%, any port; nitrate of soda, 7s. 4½d. to 7s. 6d.; sulphate of ammonia, £8. to £8. 1s. 3d. prompt, f.o.b. Leith; sal ammoniac, first and second white, £33. and £31. nett any port; sulphate of copper, £16. 15s. less 5% Liverpool; paraffin scale, hard, 1¾d. to 1½d. per lb., soft, 1½d. per lb.; paraffin wax, 120° semi-refined, 1¾d. to 2d. per lb.; paraffin spirit (naphtha), 6½d. to 7d. per gallon; paraffin oil (burning), No. 1, 5¼d., and crystal, 6d., at Glasgow and other big centres, for Scotch buyers (English sales a shade lower); ditto (lubricating) 865° £4. 15s. to £5. 5s., 885° £5. 15s. to £6. 5s., and 890/895° £6. 10s. to £7. Week's imports of sugar at Greenock were nil.

TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals continue fairly steady, and shipments are quite up to the average for this time of the year. Soda crystals in good demand at £2. 12s. 6d. per ton, gross weight, locally. Caustic 76/77° £9.; 70° £7. 10s. per ton. Sulphur firm at £5. per ton.

Bleaching powder, softs, £6. 10s. per ton, nett; hards, £6. 15s. per ton, nett; caustic soda, 76/77° £9. and 70° £7. 10s. per ton; recovered sulphur, 2 cwt. bags, £5. per ton, nett; soda ash, 48°, £4. 10s. per ton, nett; do., 50°, £4. 12s. 6d. per ton, nett; do., 52°, £4. 15s. per ton, nett; alkali, 36°, £3. 12s. 6d. per ton, nett; white alkali, 48°, £5. per ton, nett; do., 50°, £5. 5s. per ton, nett; do., 52°, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95° crude calcined, £6. per ton nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham salt 9s. per ton, f.o.b. Tees.

COALS.—Business continues fairly good, though the market is perhaps a little easier for forward. Demand is good for gas and bunker coals and also for coke. Prices steady. Best Northumbrian steam, 8s. 6d. to 8s. 9d. per ton; second qualities, 7s. 6d. to 7s. 9d. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; gas coals 7s. 9d. to 8s. 3d. per ton; bunker coals, 7s. 6d. to 8s. per ton; coke, 19s. to 21s. per ton.

New Companies.

Vidal Fixed Aniline Dyes, Ltd.—CAPITAL £300,000, in £1. shares. This company has been formed to adopt an agreement with the Fixed Aniline Colour Syndicate, Ltd., and to acquire, own, and work certain undescribed patents and rights for the production and manufacture of colouring matters. The subscribers to the memorandum of association are:—A. R. Barford, 106, Eversleigh-road, Lavender Hill, clerk; S. M. Scullin, 52, Mysore-road, Lavender Hill, S.W., clerk; W. J. Moore, Sawbridgeworth, Herts, traveller; A. Sapper, 66, Carminia-road, Balham, S.W., clerk; G. Liebig, 75, Ramsden-road, Balham, S.W., clerk; G. T. Augspurg, 48, Bessborough-street, S.W., clerk; H. Rivett, 8, Cecil-road, Upton Manor, Essex, clerk.

Anglo-Russian Petroleum Co., Ltd.—CAPITAL £120,000. in £1. shares. This company has been formed to adopt an agreement with W. S. M. Knight, and to search, bore, mine, refine, barrel, store, distribute and deal in petroleum, rock oil, coal oil, and hydro-carbons in Russia or elsewhere. The subscribers to the memorandum of association are:—J. J. Hatt, 142, Effingham-road, N., solicitor; E. Dawson, 65, Chancery-lane, W.C., agent; Miss E. Dawson, Park, Tottenham, N.; P. D. Fortunay, 58, Millman-street, W.C., gentleman; A. Westbrook, 12, Bell Yard, Law Courts, W.C., solicitor; C. E. Carpenter, 46, Birdhurst-road, Wandsworth, clerk; E. A. Payne, 5, Sheen Park, Richmond, insurance inspector. Registered office, 65 and 66, Chancery-lane, W.C.

Gutta Percha Corporation, Ltd.—CAPITAL £200,000. in £1. shares (80,000 pref.) This company has been formed to adopt an agreement with E. Stanier, and to acquire, own, and work the patent rights for the world (except for Brazil), granted to M. Serallas and M. Hourant, for the extraction of gutta-percha and similar gums from the leaves of trees producing such gums. The subscribers to the memorandum of association are:—E. Dry, 43, Northumberland-avenue, Tottenham, book-keeper; F. Marden, 3, Welbourne-road, Tottenham, N., clerk; W. T. Edmonds, 118, Beckenham-road, Beckenham, clerk; H. Elliott, 32, Chichester-road, Leytonstone, clerk; B. Templeman, 25, Priory-road, Bedford Park, W., clerk; F. Dawson, 41, Bookham-street, Hoxton, N., clerk; F. Dunsdon, 53, Shrubland-road, Walthamstow, clerk.

Dock Soap Co., Ltd.—CAPITAL £2,000. in £1. shares. This company has been formed to adopt a certain agreement, and to carry on the business of soap and candle makers. The number of directors is not to be less than 3 nor more than 7. The subscribers are to appoint the first. Qualification, £50.

La Campagnie D'Acier St. Denis, Ltd. CAPITAL £6,000. in £1. shares (4,000 pref.). This company has been formed to acquire the French and Belgian patents of Messrs. de Esteve Llatas and C. Wolfier, for improvements in the manufacture of steel, and to carry on the business of smelters, and iron and steel manufacturers. The subscribers to the memorandum of association are:—J. E. Kennelley, 7, Lebanon Gardens, Wandsworth, gentleman; B. Young, 58, Fullerton-road, Wandsworth, clerk; J. F. Norris, 26, Ickburgh-road, Upper Clapton, surveyor; H. T. Jarman, 66, Park Grove-road, Leytonstone, clerk; P. Hardcastle, 24, Herbert-road, Stockwell, accountant; G. Dickson, 87, Beechdale-road, Brixton Hill, clerk; A. Hide, 3, Park Villas, Woodford, gentleman.

Gazette Notices.

BANKRUPTCY ACTS, 1883 and 1890.
Receiving Order.

BALDOCK, A. C., Birmingham, drysalter.

IMPORTS OF CHEMICAL PRODUCTS

AT

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending October 9th.

Acetate of Lime—

U. States, 752 bgs. Lister & Biggs

Acetic Acid—

Holland, 51 pks. Little & Johnston

" 33 Hernu, Peron & Co.

" 60 R. W. Greeff & Co.

" 123 A. & M. Zimmermann

Acetone—

Holland, 1 dm. G. Rahn & Co.

Germany, 6 brls. Matthews & Luff

Alkali—

Canada, 171 c. J. Barber & Co.

Holland, 20 Little & Johnston

Germany, 213 Spies Brs. & Co.

France, 65 P. Hecker & Co.

Alum—

Germany, 34 cks. R. W. Greeff & Co.

Aniline Salts—

Holland, 30 cks. J. W. Cook & Co.

Asbestos—

Italy, 450 Deurance & Co.

Germany, 23 Craven & Co.

Barytes—

Belgium, 160 cks. J. L. Lyon & Co.

" 28 A. Zumbek & Co.

Germany, 10 H. Lambert

Holland, 24 O'Hara & Hoar

Belgium, 37 W. Harrison & Co.

Germany, 57 "

Bleaching Powder—

Holland, 93 cks. J. M. Steel & Co.

Bleaching Soda—

Germany, 200 cks. H. Lambert

Bromide of Iron—

Germany, 15 cks. A. & M. Zimmermann

Bromine—

Germany, 20 cks. A. & M. Zimmermann

Camphor—

Japan, 25 pks. L. & I. D. Jt. Co.

" 69 tubs Prop. Hay's Wf

Caoutchouc—

Singapore, 34 c. T. H. Lee

Zanzibar, 12 Hale & Son

Melbourne, 4 Tuch & Co.

Zanzibar, 318 L. & I. D. Jt. Co.

P. E. Africa, 77

" 19 Forbes, Forbes & Co.

Zanzibar, 50 S. Figgis & Co.

" 12 Major & Field

G. E. Africa, 9 J. T. Craig & Co.

Sydney, 15 Mellwraith & Co.

France, 35 Lewis & Peat

Penang, 100 E. Boustead & Co.

Singapore, 343 R. & J. Humphrey

Carbolic Acid—

Holland, 50 pks. Blagden, Waugh & Co.

" 22 J. G. Back

Castor Oil—

France, 5 cs. Anderson, Weber & Smith

Italy, 25 Bais Brs. & Co.

Caustic Potash—

France, 4 drs. J. A. Reid

Chemicals (otherwise undescribed)

France, 4 Mory & Co.

Belgium, 15 O. Scholzig

Germany, 25 L. & I. D. Jt. Co.

" 115 R. Greening

Holland, 5 Philipps & Graves

" 183 T. H. Lee

France, 5 R. W. Greeff & Co.

Germany, 13 T. H. Lee

" 214 T. H. Lee

Belgium, 315 T. Palmer

France, 250 B. & F. Wf. Co.

Germany, 6 Union Ltge. Co.

" 580 A. & M. Zimmermann

Holland, 55 G. Rahn & Co.

Copper Sulphate—

Germany, 10 cks. Charles & Fox

Cream of Tartar—

Spain, 10 cks. B. & F. Wf. Co.

France, 12 "

Portugal, 5 "

France, 10 W. C. Bacon & Co.

Dyestuffs—

Aniline

Belgium, 5 pks. W. Gerson & Co.

Cochineal

Canaries, 8 bgs. Sperling & Williams

" 8 Kuhner, Henderson & Co.

Cutch

E. Indies, 250 bgs. Wrightson & Son

Extracts

Germany, 4 cs. L. & I. D. Jt. Co.

France, 66 cks. B. & F. Wf. Co.

" 160 L. J. Levinstein & Sons

" 6 T. H. Lee

" 64 pks. Bailey & Leatham, Ld.

Germany, 17 cks. T. H. Lee

Denmark, 1 cs. Sorensen & Co.

U. States, 1 Tegner, Price & Co.

" 15 A. H. Carr & Co.

Gambier

Singapore, 1,128 bls. E. Boustead & Co.

Indigo

Holland, 2 cts. Tingle, Jacobs & Co.

E. Indies, 30 Park, Macfadyen & Co.

" 18 L. & I. D. Jt. Co.

Logwood

E. W. I., 10 t. Foy, Morgan & Co.

B. Honduras, 158 W. Shelcott

Saffron

Spain, 1 cs. J. Muller

" City Coml. Wf

Tanners' Bark

A. Turkey, 104 t. Hicks, Nash & Co.

" 10 Boutcher, Mortimore & Co.

Sydney, 15 W. & A. McArthur

Melbourne, 48 A. & W. Nesbitt

Natal, 9 "

Valonia

A. Turkey, 10 Nash

Farina—

Holland, 200 bgs. R. Bennett & Co.

" 100 J. Barber & Co.

" 100 H. Lorenz

" 50 J. Knill & Co.

Glucose—

Germany, 14 pks. 115 c. J. Knill & Co.

France, 400 W. E. Cole

" 400 J. Barber & Co.

Germany, 300 300 Baxter & Hoare

U. States, 293 1,840 Williams

Germany, 25 201 Torrey & Co.

" M. D. Co.

Glue—

Holland, 410 Hernu, Peron & Co.

" 12 Philipps & Graves

Germany, 500 T. H. Lee

Holland, 85 Carey & Sons

Austria, 250 L. & N. W. Ry. Co.

U. States, 47 Lunham & Moore

" 24 Armour & Co.

France, 51 Mory & Co.

Holland, 93 F. Claydon & Co.

Belgium, 448 J. Barber & Co.

France, 12 Bennett S. S. Co.

Germany, 28 M. D. Co.

" 104 L. & I. D. Jt. Co.

France, 20 B. & F. Wf. Co.

" 103 J. Harrison

Lamp Black—

U. States, 801 brls. L. & I. D. Jt. Co.

Lead Acetate—

Germany, 10 cks. R. W. Greeff & Co.

Litharge—

Holland, 7 cks. Spies Brs. & Co.

Magnesia—

Belgium, 430 bgs. W. G. Stewart

Manganese Ore—

Germany, 8 t. C. Hoff

Manure—

E. Indies, 225 t. A. Hunter & Co.

Methyl Alcohol—

Holland, 25 cks. Domeier & Co.

U. States, 100 T. Jones & Co.

Mica—

Canada, 4240 Allan Brs. & Co.

France, 125 B. & F. Wf. Co.

E. Indies, 4,400 W. M. Smith & Sons

" 75 E. Davis & Co.

" 40 L. & I. D. Jt. Co.

E. Indies, 3,319 Dundee, Perth & A. L.

U. States, 150 S. F. Co.

" C. T. W. J. W. C. & Co., Ltd.

Molasses—

U. States, 100 pks. 549 c. Ohlenschlaeger

" 300 1,644 J. W. C. & Co., Ltd.

Nickel Sulphate—

Germany, 5 cks. Petri & Co.

Ochre—

Holland, 42 pks. Philipps & Graves

France, 28 cks. W. Harrison & Co.

Spain, 150 cks. J. L. Lyon & Co.

France, 60 cks. Ellam, Jones & Co.

" 42 Burrell & Co.

Phosphate Rock—

France, 250 t. J. Harrison

Belgium, 240 D. de Pass & Co.

Phosphoric Acid—

Germany, 1 pk. L. & I. D. Jt. Co.

Germany, 20 brls. L. & I. D. Jt. Co.

N. Russia, 100 Union Wharfs

Pitch—

Germany, 20 brls. L. & I. D. Jt. Co.

" 339 J. Thredder, Son, & Co.

Plumbago—

Germany, 9 cks. Locke, Lancaster & Co.

Ceylon, 85 brls. Doulton & Co.

Germany, 51 cks. B. Galloway & Co.

" 239 J. Thredder, Son, & Co.

Potash—

Germany, 5 cks. H. Lambert

Potassium Carbonate—

France, 60 c. J. A. Reid

Germany, 40 Petri Br.

Potassium Chlorate—

Holland, 17 cks. R. W. Greeff & Co.

Potassium Chloride—

Germany, 508 bgs. Anglo-American Oil Co.

Potassium Oxalate—

Holland, 20 cks. R. W. Greeff & Co.

Potassium Permanganate—

Germany, 50 pks. H. Lorenz

Potassium Prussiate—

France, 38 cks. J. W. Cook & Co.

Potassium Sulphate—

Germany, 1,003 bgs. Anglo-American Oil Co.

" 508 Bessler, Waechter, & Co.

Pyrites—

Pomaron, 1,130 t. C. L. Vasey & Co.

Rosin Oil—

France, 250 brls. C. Price &

Soda —		
Belgium, 2,580 c	Sawyer, Sons, & Co.	
Holland, 100 kgs.	R. W. Greeff & Co.	
Sodium Sulphate —		
Germany, 30 cks. 233 pks.	Deering & Robottom	
	Union L. Co.	
Starch —		
Holland, 26 cs.	Carey & Sons	
" 30	T. H. Lee	
" 1981	Little & Johnston	
Germany, 1,985	Horne & Co.	
Holland, 155	Phillips & Graves	
Belgium, 550	T. H. Lee	
" 26	F. Claydon & Co.	
" 60	Sawyer, Sons, & Co.	
" 60	Taylor Bros.	
Holland, 130	E. Olyett & Sons	
Belgium, 160	Becker & Wagner	
Germany, 10 cks.	T. H. Lee	
U. States, 10 brls.	Beck & Pollitzer	
Stearine —		
Belgium, 342 bgs.	H. Hill & Sons	
" 16 cks.		
U. States, 2	L. & I. D. Jt. Co.	
Belgium, 50 bg.	Kumpff & Eckenstein	
Tar —		
N. Russia, 200 brls.	Union Whvs. Co.	
Tartaric Acid —		
Holland, 14 pks.	B. & F. Wf Co.	
" 2	Kirkpatrick & Co.	
Ultramarine —		
Germany, 24 cks.	T. Hamilton & Co.	
" 11	J. Barber & Co.	
" 20	Hernu, Peron, & Co.	
" 117 pks.	G. Rahn & Co.	
" 4 cks.	Haefner, Hilpert, & Co.	
Varnish —		
U. States, 18 pks.	Taylor Bros.	
" 6	Dawson Bros.	
France, 2	Mory & Co.	
White Lead —		
France, 9 cks.	J. Watt & Son	
Holland, 40	W. Balchin, Ltd.	
Norway, 40	Burrell & Co.	
" 17	R. W. Greeff & Co.	
Germany, 54	Randall Bros.	
Belgium, 40	J. L. Lyon & Co.	
Germany, 11	H. Lambert	
" 19	W. A. Rose & Co.	
" 29	J. Matton	
" 61	Wilkinson, Heywood, & Co.	
Wood Pulp —		
Germany, 400 pks.	H. C. Everett	
" 400	Christophersen, Andrews, & Co.	
" 21	F. Claydon & Co.	
" 58	C. S. Lovell	
Holland, 73	Henderson, Craig, & Co.	
Portugal, 500	W. G. Taylor & Co.	
Sweden, 254	Tough & Henderson	
" 340 bls.	J. Owen	
Norway, 5,792 pks.	Henderson, Craig, & Co.	
" 87	Christophersen, Andrews, & Co.	
Sweden, 800	"	
" 407	Becker & Co.	
U. States, 75 pks.	Henderson, Craig, & Co.	
Norway, 4,047	London Paper Mill Co.	
Sweden, 3,177	W. G. Taylor & Co.	
Zinc Oxide —		
Holland, 25 cks.	Fellows, Morton, & Co.	
U. States, 300 brls.	M. Ashby, Ltd.	
Holland, 240 cks.	Spies Bros. & Co.	
" 24 brls.	M. Ashby, Ltd.	
Germany, 105	"	

LIVERPOOL.

Week ending October 7th.

Alum Cake —	
Rotterdam, 100 cks.	
Asbestos —	
Genoa, 5 pks.	
Cartagena, 18	
Barytes —	
Antwerp, 50 bgs.	
Benzine —	
New York, 500 brls.	
Bone Ash —	
B. Ayres, 150 bgs.	W. B. Dickinson
" 579 t. & qty.	

Bone Meal —	
B. Ayres, 390 bgs.	Roccar, Lavast & Huos
Borate of Lime —	
Antofagasta, 1,310 sks.	
Borax —	
Valparaiso, 1,350 sks.	Hainsworth Watson
Caoutchouc —	
Valparaiso, 26 pks.	Kleinwort, Sons & Co.
Chemicals (otherwise unascr.) —	
Hamburg, 3 cs.	
Rotterdam, 75 cks.	
Chrome Ore —	
Sydney, N.S.W., 2,071 bgs.	
Colours —	
Rotterdam, 4 cks.	
Cottonseed Oil —	
Malta, 5 cs.	J. H. Summers & Co.
New York, 100 brls.	
Cream of Tartar —	
Bordeaux, 27 cks.	
Dyestuffs —	
Argols, 6 cks.	
Oporto, 48	
Gutch —	
Rangoon, 1,622 bxs.	
Fustic —	
Kinston, 80 pps.	R. B. Watson
Vera Cruz, 2,176	
Logwood —	
Fort Liberté, 460 t.	L. Pagenstecher
Saffron —	
Seville, 1 cs.	
Farina —	
Stettin, 6,400 bgs.	Browne, Geveke & Co.
Glucose —	
New York, 195 brls.	T. M. Duche & Son
Glue —	
Rotterdam, 75 bgs.	
Fiume, 100 bls.	
Iron Oxide —	
Montreal, 40 kgs. 65 brls.	W. Lester & Sons
Lead Acetate —	
Hamburg, 4 cks.	
Limestone —	
Antwerp, 3 crts.	
Litharge —	
Rotterdam, 17 cks.	
Lithopone —	
Rotterdam, 20 cks.	
Manganese Ore —	
Yokohama, 500 t.	
Naphtha —	
New York, 6,901 brls.	
Paint —	
Boston, 50 cs.	
Potash —	
Montreal, 25 brls.	
Potassium Prussiate —	
Havre, 8 cks.	Cunard S. S. Co. Ltd.
Pyrates —	
Huelva, 3,830 t.	Matheson & Co.
" 1,430	H. Bath & Son
Rosin —	
Maranham, 1 ck.	Gunston, Sons & Co.
Saltpetre —	
Hamburg, 10 cks.	
Sheep Dip —	
B. Ayres, 131 cs.	Quibell Bros.
Silver Sulphide —	
Vera Cruz, 43 cs.	Elliot Metal Co.
Soap —	
Boston, 682 brls.	
Smyrna, 74 cs.	
Rotterdam, 5	
Philadelphia, 5	
Naples, 285	
Soapstone —	
Genoa, 150 bgs.	G. Huntriss & Co.
Sodium Nitrate —	
Callao, 2,203 sks.	
Junin, 5,174	New Tamarugal N. Co.
Sodium Silicate —	
Rotterdam, 5 cks.	
Starch —	
Antwerp, 140 cs.	

Stearine —	
Antwerp, 35 bgs.	
Tallow —	
New York, 65 tcs.	
River Plate, 276 pps.	J. Nelson & Sons, Ltd.
Sydney, 1,564 cks.	Lever Bros. Ltd.
B. Ayres, 157 cks.	198 hf. pps.
Tar —	
Havre, 2 dms.	Cunard S. S. Co. Ltd.
Tartar —	
Naples, 1 ck.	Taylor, Irvine & Co.
Tartaric Acid —	
Trieste, 6 cks.	
Tin Ashes —	
Genoa, 179 bgs.	
Ultramarine —	
Rotterdam, 20 cks.	
Varnish —	
New York, 30 brls.	W. A. Warren
White Lead —	
Rotterdam, 65 cks.	
Wood Pulp —	
Gothenburg, 110 bls.	F. Doherty
Boston, 68	
Havre, 270	
Rotterdam, 106 rls.	Cunard S. S. Co.
" 296 bls.	
Zinc Oxide —	
Antwerp, 80 brls.	
Zinc White —	
Rotterdam, 90 cks.	

MANCHESTER.

Week ending October 9th.

Acetate of Lime —	
New York, 441 bgs.	
Acetic Acid —	
Rotterdam, 100 blns.	
Acids —	
Rotterdam, 40 dms.	
Alizarine —	
Rotterdam, 6 bxs. 8 cs.	
Aniline —	
Rotterdam, 2 cks.	
Aniline Salts —	
Rotterdam, 5 cks.	
Asbestos —	
Hamburg, 2 cs.	
Barytes —	
Antwerp, 20 bgs.	
Caustic —	
Hamburg, 24 cks.	
Chemicals (otherwise undescribed) —	
Rotterdam, 31 cks.	
Colours —	
Boulogne, 4 cks. 1 cs.	
Rotterdam, 72 bxs. 133 brls.	
Antwerp, 2 cks. 28	J. T. Fletcher & Co.
Ghent, 10	9 brls.
Cream of Tartar —	
Rotterdam, 6 cks.	
Farina —	
Stettin, 1,900 bgs.	Stott, Coker, & Co.
Hamburg, 371	
Rotterdam, 700	
Glue —	
New York, 10 brls.	
Rotterdam, 2 cs.	
Antwerp, 3 bls.	
Indigo —	
Rotterdam, 2 chts.	
Limestone —	
Antwerp, 4 crts.	J. T. Fletcher & Co.
Lithopone —	
Rotterdam, 8 cks.	
Paraffin Scale —	
New York, 1,317 brls.	
Phosphate —	
Rotterdam, 4 cks.	
Potash —	
Rotterdam, 5 cks.	
Potassium Carbonate —	
Stettin, 32 cks.	Stott, Coker, & Co.
Potassium Chloride —	
Hamburg, 24 cks.	

Potassium Prussiate —	
Rotterdam, 2 cks.	
Potassium Sulphate —	
Rotterdam, 100 cks.	
Pumice Stone —	
Rotterdam, 12 cs.	
Starch —	
New York, 600 bgs.	600 sks.
Hamburg, 328 cs.	
Rotterdam, 104	
Antwerp, 250	J. T. Fletcher & Co.
Stearine —	
Rotterdam, 30 bls.	
Antwerp, 6 bgs.	J. T. Fletcher & Co.
Tar Salts —	
Hamburg, 4 cks.	
Tar Waste —	
Rotterdam, 2 cks.	
Tartaric Acid —	
Rotterdam, 9 cks.	
Waste Salt —	
Hamburg, 180 bgs.	and qty.
White Lead —	
Rotterdam, 24 cks.	
Wood Pulp —	
Montreal, 842 rolls	
Arendal, 600 bls.	
Christiania, 1,500	W. H. Ingram
" 90 cs.	
Drammen, 45	
Kallero, 1,586	
Stettin, 58	Stott, Coker, & Co.
Gefle, 8,320	
Gothenburg, 2,773	7 bdls.
Zinc Chloride —	
Rotterdam, 7 brls.	
Zinc Oxide —	
Rotterdam, 100 brls.	
Zinc White —	
Rotterdam, 13 cks.	

HULL.

Week ending October 9th.

Acetic Acid —	
Rotterdam, 5 bls.	Hutchinson & Son
Antimony —	
Leghorn, 20 cks.	Wilson, Sons, & Co., Ltd.
Arsenic —	
Hamburg, 28 cks.	Wilson, Sons, & Co., Ltd.
Asbestos —	
Genoa, 4 bls.	
Barytes —	
Rotterdam, 83 cks.	Hutchinson & Son
Antwerp, 180	Bailey & Leatham, Ltd.
55 bgs.	
Bone Meal —	
Bombay, 3,009 bgs.	
Borax —	
Bordeaux, 2 cs.	Rawson & Robinson
Caoutchouc —	
Stockholm, 1 bg.	Wilson, Sons, & Co., Ltd.
Chemicals (otherwise undescribed) —	
Rotterdam, 3 cks.	Hutchinson & Son
Hamburg, 19	Wilson, Sons, & Co., Ltd.
Bremen, 1 cs.	Veltmann & Co.
3	
Cod Oil —	
Hamburg, 30 brls.	Wilson, Sons, & Co., Ltd.
Christiania, 10	
Aalesund, 167	
Bergen, 42	
Colours —	
Marseilles, 14 cs.	Wilson, Sons, & Co., Ltd.
Hamburg, 5 pks.	
Rotterdam, 5 cks.	Hutchinson & Son
Dunkirk, 3	Wilson, Sons, & Co., Ltd.
Rotterdam, 25	W. & C. L.
33 pks. 11 brls.	Ringrose & Co.
Bremen, 43 cks.	Sissons Bros.
Cream of Tartar —	
Rotterdam, 4 cks.	Hutchinson & Son

Cryolite — Copenhagen, 64 cks. Wilson, Sons, & Co., Ltd. Dyestuffs — Alizarine Rotterdam, 1 bbl. Hutchinson & Son " 13 pks. W. & C. L. Ringrose " 18 brls. Argols Naples, 2 cks. Wilson, Sons, & Co., Ltd. Myrabolams Bombay, 1,342 bgs. Farina — Harlingen, 120 bls. Hutchinson & Son " 600 bgs. W. & C. L. Ringrose Gelatine — Hamburg, 1 cs. Bailey & Leatham, Ltd. Glue — Rouen, 8 cks. Rawson & Robinson Antwerp, 50 cs. 35 bls. Bailey & Leatham, Ltd. Dunkirk, 54 18 Wilson, Sons, & Co., Ltd. Kaolin — Amsterdam, 20 cks. Hutchinson & Son Rotterdam, 240 bgs. " Lead Acetate — Hamburg, 10 cks. Bailey & Leatham, Ltd. Lithopone — Hamburg, 36 cks. Wilson, Sons, & Co., Ltd. Minium — Rotterdam, 16 cks. Hutchinson & Son Ochre — Marseilles, 8 cks. Paint — Stockholm, 1 bbl. Wilson, Sons, & Co., Ltd. Peroxide of Iron — Hamburg, 2 cks. Wilson, Sons, & Co., Ltd. Phosphate — Ghent, 80 t. Wilson, Sons, & Co., Ltd. Antwerp, 15 cks. " Pitch — Antwerp, 25 cks. Wilson, Sons, & Co., Ltd. Dunkirk, 100 Plumbago — Leghorn, 300 bgs. Veltmann & Co. Bremen, 2 cks. Potash — Hamburg, 15 dms. Wilson, Sons, & Co., Ltd. Antwerp, 30 Salt — Bremen, 5 cks. Veltmann & Co. Soap — Marseilles, 31 cs. Wilson, Sons, & Co., Ltd. Rotterdam, 4 Hutchinson & Son Copenhagen, 10 8 pks. Wilson, Sons, & Co., Ltd. Soda — Antwerp, 120 bgs. Bailey & Leatham, Ltd. " 100 Wilson, Sons, & Co., Ltd.	Starch — Ghent, 448 cs. Wilson, Sons, & Co., Ltd. Antwerp, 80 Bailey & Leatham, Ltd. " 80 Wilson, Sons, & Co., Ltd. Tallow — Hamburg, 58 pks. Wilson, Sons, & Co., Ltd. Duakirk , 107 cks. " Tar — Stockholm, 10 brls. Tartar — Naples, 10 cks. Wilson, Sons, & Co., Ltd. Tartaric Acid — Rotterdam, 2 cks. W. & C. L. Ringrose " 8 Hutchinson & Son Tin Chlorate — Rotterdam, 1 ck. Hutchinson & Son Ultramarine — Rotterdam, 4 cks. Hutchinson & Son " 4 W. & C. L. Ringrose Waste Salt — Hamburg, 50 bgs. Wilson, Sons, & Co., Ltd. " 308 bgs. White Lead — Rotterdam, 43 cks. Hutchinson & Son Ghent, 16 Wilson, Sons, & Co., Ltd. Antwerp, 22 Bailey & Leatham, Ltd. Amsterdam, 20 W. & C. L. Ringrose Wood Pulp — Christiania, 1,076 bls. Wilson, Sons, & Co., Ltd. Drontheim, 632 " Gothenburg, 1,196 " Konigsberg, 200 bls. Bailey & Leatham, Ltd.	Mineral White — Genoa, 100 bgs. Ochre — Rouen, 142 cks. Marseilles, 7 cks. Paraffin Wax — Baltimore, 100 brls. Plumbago — Genoa, 40 brls. 300 bks. Potash — Rotterdam, 52 cks. J. Rankine & Son Pyrites — Huelva, 1,741 t. Tharsis Co. Rosin — New York, 705 brls. Soap — Rouen, 4 cs. Marseilles, 536 Sodium Acetate — Rouen, 25 cks. Starch — Montreal, 30 bxs. Rotterdam, 15 cs. J. Rankine & Son Stearine — Amsterdam, 62 bgs. J. Rankine & Son Tartar — Bordeaux, 15 cks. Treacle — New York, 500 bls. Waddall & Bryson Turpentine — Antwerp, 275 brls. White Lead — Rotterdam, 62 cks. J. Rankine & Son " 48 pks. Wood Pulp — Oregrund, 1,538 bls. Crawford & Hamilton Boston, 138 Montreal, 343 bndls. 1,000 bls. Drontheim, 2,827 bls. Hamburg, 200 Abus, 4,000 Clyde Paper Co. Christiania, 1,795 1 cs. Zinc White — Rotterdam, 25 pks.	Starch — Rotterdam, 160 cs. Tyne S. S. Co. Antwerp, 60 " Stearine — Rotterdam, 7 bgs. Tyne S. S. Co. Wood Pulp — Rotterdam, 104 bls. Tyne S. S. Co. Christiania, 2,050 Gothenburg, 7 Zinc Oxide — Antwerp, 35 brls. Tyne S. S. Co.
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GOOLE.

Week ending October 6th.

Alizarine — Rotterdam, 85 cks. 2 cs.	Alkali — Calais, 4 cks.
Antimony — Boulogne, 1 ck.	Caoutchouc — Boulogne, 3 cks.
Dyestuffs (otherwise undescribed) Boulogne, 11 cks. 4 cs. Rotterdam, 414 95	Farina — Hamburg, 200 bgs. Delfsyzhl, 1,000
Glucose — Calais, 190 bgs.	Glue — Rotterdam, 10 bgs.
Pitch — Rotterdam, 50 cks.	Plumbago — Boulogne, 2 cs.
Potash — Antwerp, 9 cks. Dunkirk, 10 60 dms— Hamburg, 25	Saltpetre — Rotterdam, 170 bgs. Hamburg, 7 brls.
Soda — Antwerp, 3 cks.	Starch — Ghent, 56 cs.
Stearine — Antwerp, 13 bgs.	Wood Pulp — Antwerp, 1,048 bls.

GRIMSBY.

Week ending October 9th.

Caoutchouc — Antwerp, 2 cs. Hamburg, 2	Chemicals (otherwise undescribed) Rotterdam, 1 ck. Hamburg, 3
Colours — Hamburg, 4 cks. 5 cs. Rotterdam, 2 Antwerp, 3 17 pks.	Glue — Dieppe, 4 cks.
Soap — Malmo, 1 bx.	Starch — Antwerp, 182 cs.
Wood Pulp — Fredrickstadt, 397 t. Malmo, 80 bls.	Zinc Ashes — Hamburg, 1 cs.

EXPORTS OF CHEMICAL PRODUCTS

OF

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending October 13th.

Alkali — Hamburg, 5 t. £26 Auckland, 4 29	Alum — Mazagan, 5 t. 13 c. £30 Alum Waste — Calcutta, 41 t. 7 c. £101 Ammonia — Bombay, 8 cyldrs. £59 Kobe, 3 flks. 30	Alum Earth — Hamburg, 43 cks. Tyne S. S. Co. Antimony Ore — Antwerp, 1,641 bgs. Tyne S. S. Co. Asphaltum — Hamburg, 54 cks. Tyne S. S. Co. Barium Chlorate — Rotterdam, 700 bgs. Tyne S. S. Co. Barytes — Rotterdam, 22 cks. Tyne S. S. Co. Lithopone — Antwerp, 2 cs. Tyne S. S. Co. Minium — Rotterdam, 16 cs. Tyne S. S. Co. Paraffin Scale — New York, 25 brls. C. Hassel Phosphate — Fernaundina, 2,300 t. Quicksilver — Copenhagen, 100 cyldrs. Salt — Hamburg, 290 t. Clephans & Wiencke Saltpetre — Hamburg, 3 kgs. Tyne S. S. Co. 1 bbl.	Salonico , 1 1 c. 31 Bourgas , 10 13 St. Petersburg , 2 34 Genoa , 1 17 Ammonium Sulphate — Hamburg, 100 t. £800 Demerara, 19 15 c. 158
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Copper Sulphate—

Seville,	1 t.	6 c.	£23
Yokohama,	7	3	144
Rio de Janeiro,	2	19	55
Genoa,	10	7	159
Syra,	9	1 q.	8
Colombo,	5	3	21
Bordeaux,	4	18	75
Palermo,	4		59
Riga,	1	6	20
Piraeus,	2	2	33
Salonica,	2		32
Catacolo,	5	1	83
Calamata,	2		30
Smyrna,	19	1	15
Naples,	13	79	270
Trieste,	9	8	188
Calcutta,	10		163
Auckland,	1		16
Melbourne,	15		232
Rotterdam,	11	4	167
Patras,	10	3	157

Copperas—

Syra,	2 t.	10 c.		£5
Madras,	2	3	1 q.	6
Callao,	2	16		6
Calcutta,	28			46

Disinfectants—

Kurrachee,	1 t.	3 c.	£26
Calcutta,	3	3 q.	6

Guano—

Malaga,	39 t.	18 c.	£140
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Lime—

Lagos,	12 t.		£11
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Magnesia—

Havre,	8 cs.		
New York,	10 pks.		

Magnesium Sulphate—

Bahia,	10 kgs.		
Karachi,	50 pks.		
Lisbon,	10 cks.		
Madras,	40		
Montreal,	75 brls.		

Nitric Acid—

Coquimbo,	1 t.	7 t.	£19
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Oxalic Acid—

Boston,	34 t.	8 c.	£978
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Paint—

Alexandria,	200 kgs.		
Amsterdam,		15 frks.	2 cs.
Bahia,	16 kgs.		
Barbadoes,	04	10 dms.	5 cks.
Bathurst,	100	75	4
Belize,			3
Buguma,	240		
Calcutta,			240 cs.
Callao,	60		
Cartagena,		12	
Colon,	240		
Dixcove,	7		
Hamburg,	57		
Kingston,			3 cks.
Lagos,			2
Larnaca,			1
Las Palmas,	33		
Lisbon,			3
Manaos,			
New York,	23 pks.		
Para,	19	150 dms.	6
Pernambuco,	50		
San Juan,			3
Savannah,	350		
Smyrna,	80		
Syra,			6
Valparaiso,	93 pks.		
Yokohama,		180 dms	

Painters' Colours—

Arecibo,	2 cks.		
Bilbao,	50		
Bremen,	81	100 bgs	
B. Ayres,			51 pks
Calcutta,		2 cs.	
Callao,			2
E. London,			99
Galatz,	100 kgs		
Hamburg,	20	6	
Hong Kong,	4 cks.		
Kingston,		2 brls.	
Lisbon,	1		
Mogador,	140 kgs.	1 cs.	

Paraffin Wax—

Ancona,	56 bgs.		
Bari,	20		
Genoa,	125		
Larnaca,		5 cs.	

Phosphorus—

Osaka,	15 c.	£150
Vera Cruz,	12	132

Potash—

B. Ayres,	8 c.	2 q.	£5
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Potassium Bicarbonate—

New York,	1 t.	13 c.	1 q.	£44
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Potassium Bichromate—

Piraeus,	1 t.			£65
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Potassium Carbonate—

Constantinople,	5 brls.			25
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Potassium Chlorate—

New York,	50 t.	2 c.		£895
Hamburg,	2 t.	4 c.		£68
Montreal,	1			36
Rotterdam,	1			36
Hiogo,	2	10		81
Odessa,	8			273
Riga,	5			150
St. Petersburg,	38	10		1,231
Vera Cruz,	2			80
Sydney,	6			196

Salt—

Akassa,	556 t.	6 c.		
Antwerp,	266	16		
Assinee,	12	5		
Baltimore,	335	18		
Barbadoes,	12	10		
Benin,	200			
Boma,	4			
Bombay,	200			
Boston,	50			
Brishane,	100			
B. Ayres,	1,799	150 cs.		
Calcutta,	3,000	bgs.		
Camerrons,	750			
C. C. Castle,	300			
Cape Lopez,			7,358 sks.	
Christiania,			4,978	
Conakry,	900 t.			
Copenhagen,			700	
E. London,	158			
Frederikshavn,			900	
Fuca,			570	
Ghent,			250	
Gd. Bassam,			200	
Kingston,			1,250 bgs.	
Lagos,			675	
Matadi,			3,880	
Montreal,	1,104 t.			
Newcastle,	176			
N. Orleans,	300			
Newport News,			1,200	
Noqui,	10			
Para,	100			
Philadelphia,	37	10 c.		
Pt. Natal,	120			
Rotterdam,	160			
St. John's N. B.,	600			
Sinoe,	59	10		
Valparaiso,	236			

Salt Cake—

Leghorn,	100 t.			£143
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Saltpetre—

Syra,	1 t.	5 c.		£26
M. Video,		5		5
New York,	1			23
Malta,		5		5

Sheep Dip—

B. Ayres,		10 c.		£175
Bahia Blanca,	37 t.			884

Soap—

Abonneima,	1,000	bxs.		
Accra,	50			
Akassa,	50	1 cs.		
Algoa Bay,	3,020		10 bdis.	
Amsterdam,	23	141		
Antwerp,		2,000		
Arucas,	175			
Barbadoes,	2,512			
Batavia,	3,000			
Bathurst,	245			
Beira,		6		
Bombay,	185	24		
Buguma,	250			
Calcutta,		320	750	
C. C. Castle,	250			
Cape Town,		3		
Chama,	37			
Conakry,	40			
Constantinople,	200			
Curacao,	100			
Dakar,	15			
Delagoa Bay,	140	130		
Elmina,	60			
Gibraltar,	100			
Guayaquil,	300			
Hong Kong,	200	kgs.		
Jersey,	21	bxs.		
Karachi,		14		
Lagos,	37			
Las Palmas,	338			
Macassar,	626			
Menado,	1,000			
Monrovia,	40			
Montreal,		825		
New York,	130		13 cks.	
Old Calabar,	412			
Opobo,	500			

Para,	100			
Penang,	473			
Pt. Elizabeth,	1,100	25		
Pt. Natal,	100	71	15 bdis.	
Pram Pram,	50			
Rotterdam,	150	800		
Rufisque,	25			
St. John's, N. B.,	40	20		
St. Lucia,	315			
St. Thomas,	300			
Savannah,		1		
Shanghai,	2,045			
Sierra Leone,	70			
Singapore,	454			
Sourabaya,		25		
Teneriffe,	224	4		
Trieste,		1		
Trinidad,	100			
Warri,	150			

Soda Alkali—

Ancona,		20 brls.		
Barcelona,		50		
Odessa,		50		
Para,		50		
Quebec,		40		

Soda Ash—

Ancona,	40	bgs.		
Antwerp,	3,630		155 pks.	
Hoston,	850		97 tcs	30 cks.
B. Ayres,			93	
Calcutta,			156	
Canterbury,			33	
Dunedin,			21	
Genoa,	440			
Ghent,	67	54	11	
Gothenburg,	100		30	
Hamburg,	600		20	
Hiogo,			196 brls.	
Kobe,			110	
Melbourne,			168	
Newport News,			328	
New York,	3,150		96 tcs.	35
Otago,			7	
Para,	50			
Philadelphia,	5,200		188	
Piraeus,			150 brls.	
Quebec,			25 tcs	
Riga,			250	
Rio de Janeiro,			330 brls.	
Rotterdam,			13	
St. Peterburg,			312	
Salonica,			50	
Smyrna,	100			
Stettin,	800			
Trieste,	100			
Venice,	100			
Yokohama,			74	

Soda Crystals—

Alexandria,		30 cks.		
B. Ayres,		250		
Calcutta,		38 brls.		
Jersey,	300	bgs.		
Malta,		50	50	
Montreal,	77	304	475 pks.	
New York,	572	kgs.		
Quebec,		280	140 cks.	
St. John's, N. B.,		150 kgs.		
		100 kgs.		

Sodium—

Rotterdam,		19 c.		£119
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Sodium Bicarbonate—

Algoa Bay,	200	bgs.		
Auckland,	107	kgs.		
Barbadoes,	100			
Bordeaux,	15			
Boston,	50			
B. Ayres,	20		51 cks.	
Calcutta,	635			
Canterbury,	5			
Dunedin,	100			
Havre,	70		6	
Kobe,	500			
Lisbon,	30			
Malaga,	20			
Malta,	10			
Melbourne,	1,650		22	
Montreal,	300	kgs.		
New York,	50	bgs.	10	
Odessa,	20			
Quebec,	40	kgs.		
Riga,	100		15	
Rio de Janeiro,	40			
St. John's, N. B.,	7			
Santos,	370			
Smyrna,		100 brls.		
Sydney,	200		25 pks.	
Valparaiso,	50			
Wellington,	375			
	20	bgs.		

Sodium Carbonate—

Boston,		56 brls.		
New York,		56		

Sodium Chlorate—

St. Petersburg,	100	kgs.		
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Sodium Hyposulphate—

Genoa,	40	kgs.		
Montreal,	65		1 ck.	
Naples,			2	

Sodium Silicate—

New York,		10 brls.		
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Sodium Sulphate—

Copenhagen,		87 bgs.		
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Starch—

Boston,		15 cks.		
Rio de Janeiro,		20 brls.		

Sulphur—

Lagos,		1 t.		£6
Montreal,	200	5 c.		904
Boston,	200	2		864
Gothenburg,	30			127
Para,	1	4	1 q.	10

Sulphuric Acid—

E. London,	1 t.	7 c.	3 q.
Trinidad,	50 glns.		

Superphosphates—

HULL.

Week ending October 9th.

Alkali—

Abo,	1 ble.
Bremen,	120 bgs.
Hango,	4 cks.
Helsingfors,	9
Venice,	61
Wyburg,	9
Wasa,	3

Aluminium—

Gothenburg,	1 cs.
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Ammonium Sulphate—

Antwerp,	400 bgs.
Dunkirk,	347
Venice,	103

Benzol—

Rotterdam,	25 cks.
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Borax—

Gothenburg,	1 cs.
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Caustic Soda—

Abo,	139 cks.
Uleaborg,	4
Wasa,	1

Chemicals (otherwise undescribed)

Antwerp,	6 cs.
Amsterdam,	57 cks.
Alexandria,	13 4 dms.
Abo,	10
Bergen,	2 6 pks.
Bari,	12
Constantinople,	50 1
Danzig,	41 9
Drontheim,	10
Ghent,	6
Gothenburg,	6
Hamburg,	48 79
Libau,	4
Odessa,	49
Rotterdam,	9 44
Stockholm,	24
Stettin,	21 1 8
Stavanger,	1
Trieste,	12
Venice,	20
Wasa,	7

Cottonseed Oil—

Antwerp,	772 c.
Amsterdam,	1,288
Bremen,	85
Constantinople,	128
Dunkirk,	91
Hamburg,	1,427
Rotterdam,	412
Stettin,	1,004
Trieste,	731

Dyestuffs (otherwise undescribed)

Hamburg,	1 ck.
Stettin,	2 cs.

Guano—

Dunkirk,	55 t.
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Linseed Oil—

Amsterdam,	207 c.
Bordeaux,	34
Christiansund,	49
Drontheim,	35
Ghent,	7
Hamburg,	603
Rouen,	47
Rotterdam,	17

Manure—

Husum,	200 t.
Stettin,	220
Venice,	322

Mineral White—

Bergen,	50 bgs.
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Painters' Colours—

Amsterdam,	27 cks.
Antwerp,	22 6 cs. 194
Abo,	75
Christiansund,	6
Constantinople,	1
Danzig,	11
Drontheim,	1
Helsingfors,	100 1
Hamburg,	14 3
Messina,	1
Rouen,	35 14
Rotterdam,	19 5
St. Petersburg,	50
Stettin,	48 2
Uleaborg,	8
Venice,	11
Wasa,	76

Soap—

Amsterdam,	120 cs.
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Tallow—

Alexandria,	29 cks.
Gothenburg,	6
Helsingfors,	37
Stockholm,	27

Tar—

Amsterdam,	6 cks.
Bremen,	6
Dunkirk,	52
Danzig,	4
Helsingfors,	200 bls.
Rotterdam,	5 cks.
Stockholm,	535
Uleaborg,	10

Turpentine—

Helsingfors,	10 bls.
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Varnish—

Antwerp,	2 cks. 2 cs.
Amsterdam,	2
Bordeaux,	1
Gothenburg,	18
Stettin,	18

Whiting—

Antwerp,	34 cks.
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GLASGOW.

Week ending October 14th.

Alkali—

Vloilo,	14 t. 14 1/2 c.
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Ammonium Carbonate—

Canada,	£70
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Alumina Sulphate—

Nickerie,	40 t.
Genoa,	70 8 1/2 c.
Italy,	188 16 1/2
Nantes,	30 10 1/2
New York,	50 17 1/2
Valencia,	256 8 1/2

Boric Acid—

Sydney,	12 q.
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Borax—

Amsterdam,	£15
Rotterdam,	£48 12s.

Coal Products—

Benzol	6 t. 10 c.
Creosote Oil	11
Christiana,	£6
France,	1,350
Russia,	300

Naphtha

Nickerie,	1 t. 6 c.
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Pitch

Russia,	£135
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Caen

Caen,	319 t. 8 c.
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Penang

Penang,	500 11
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Havre

Havre,	£689
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Nickerie

Nickerie,	230
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Canada

Canada,	£151
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Tar

Bombay,	£280
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Karachi

Karachi,	25
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Amsterdam

Amsterdam,	20
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Nickerie

Nickerie,	37
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Canada

Canada,	£194
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Dyestuffs (otherwise undescribed)

Amsterdam,	£194
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Extracts—

Barcelona,	£70
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Canada

Canada,	551
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Wate loo, Ca.

Wate loo, Ca.,	78
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Gelatine—

Canada,	£219
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Guano—

Eelawen,	143 t. 10 c.
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Manila

Manila,	6
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Iodine—

Rotterdam,	£799
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Lead Acetate—

Bombay,	5 t. 6 1/2 c.
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Lead Nitrate—

Italy,	£86
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Linseed Oil—

Durban,	1 t. 4 c.
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Manila

Manila,	2 5 1/2
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Philippine Is.

Philippine Is.,	5
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Nickerie

Nickerie,	9
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Calcutta

Calcutta,	16
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Kingston, Jam.

Kingston, Jam.,	11 6 1/2
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Logwood—

Cornwall, Ont.,	£310
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Manure—

Bordeaux,	9 t. 12 c.
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Valencia

Valencia,	25 12
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Muriatic Acid—

Bombay,	£52 10s.
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Nitric Acid—

Bombay,	£305
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Paint—

Manila,	£179
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Menado

Menado,	36
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Pietermaritzburg,

Nickerie,	1 t. 14 c.
Canada,	£20
Shanghai,	45
Spain,	140

Painters' Colours—

Bombay,	£281
Colombo,	qty.
Yloilo,	"
Calcutta,	"
Hong Kong,	58
Singapore,	43

Paraffin Wax—

Bombay,	£56
Cape Town,	29
Turkey,	180
Barcelona,	360
Leghorn,	776
Sicily,	22
Valencia,	20
Amsterdam,	15
Italy,	212

Phosphoric Acid—

Christiania,	£157
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Plumbago—

Bilbao,	£45
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Potash Salts—

Singapore,	£81
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Potassium Bichromate—

Turkey,	£212
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Rosin—

Bombay,	£57
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Salt—

Saigon,	2 t. 2 1/2 c.
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Soap—

Nickerie,	1 c.
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Soda—

Nickerie,	16 c.
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Sodium Bichromate—

Ghent,	4 t. 2 1/2 c.
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U.S.A.

U.S.A.,	3
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Barcelona

Barcelona,	29 1/2
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Italy

Italy,	13 14
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Montreal

Montreal,	1 17 1/2
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Sodium Sulphate—

Canada,	£93
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Starch—

Rotterdam,	£66
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Sulphuric Acid—

Bombay,	£945
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Penang

Penang,	21
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Nickerie

Nickerie,	2 t. 16 c.
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Tallow—

Rotterdam,	2 t. 20 c.
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Spain

Spain,	12 9
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Turpentine—

Philippine Is.,	£54
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Nickerie

Nickerie,	1
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Varnish—

Shanghai,	£43 15s.
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TYNE.

Week ending October 9th.

Alkali—

St. Petersburg,	58 t. 15 c.
Rotterdam,	19

Alum Waste—

Odense,	10 t. 6 c.
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Ammonia—

St. Petersburg,	3 t.
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Ammonium Carbonate—

Halmstad,	1 t.
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Ammonium Sulphate—

Hamburg,	30 t. 16 c.
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Antimony—

Antwerp,	1 t. 10 c.
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Copenhagen

Copenhagen,	10
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Montreal

Montreal,	8
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Barium Binoxide—

Rouen,	5 t. 10 c.
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Rotterdam

Rotterdam,	2 5
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Bleaching Powder—

Hamburg,	21 t. 14 c.
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Antwerp

Antwerp,	59 2
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Amsterdam

Amsterdam,	50 2
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Rotterdam

Rotterdam,	28 12
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PRICES CURRENT.

WEDNESDAY, OCT. 20TH, 1897.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—

	£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/6	& 8/6
" Glacial	"		40/-
Arsenic S.G., 2000	"	1	4 0
Fluoric	per lb.	0 0	3 1/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0 0	10
(Cylinder), 30° Tw.	"	0 3	0
Nitric 80° Tw.	per lb.	0 0	1 1/2
Nitrous	"	0 0	1 1/4
Oxalic	nett	0 0	3 1/2
Phosphoric, 1750°	"	0 0	11 1/2
Picric	"	0 0	11
Sulphuric (fuming 50 %)	per ton	15	10 0
(monohydrate)	"	5	10 0
(Pyrites, 168°)	"	3	0 0
" 150°	"	1	5 0
(free from arsenic, 145°)	"	1	7 6
Sulphurous (solution) S.G. 1025	"	3	0 0
Tannic (pure)	per lb.	0 1	2 1/2
Tartaric	"	0 1	1 1/2
Arsenic, white powdered	nett per ton	21	15 0
Alum (loose lump)	"	4	10 0
Alumina Sulphate (pure)	"	4	2 6
Aluminoferrous	"	2	3 6
Aluminium (Ingot metal 98/99 3/4 %	nett	148	0 0
Ammonia, Anhydrous	per lb.	0 1	3
" 880=28° B.	"	0 0	2 1/4
" =24° B.	"	0 0	1 1/4
Carbonate	nett	0 0	3
Muriate	per ton	18	0 0
" (sal-ammoniac) 1st & 2nd	per cwt.	33/-	& 31/-
Nitrate	per ton	31	0 0
Phosphate	per lb.	0 0	3 1/4
Sulphate (grey) London	per ton	8	3 9
" (grey) Hull	"	8	1 3
Aniline Oil (pure)	per lb.	0 0	7
Aniline Salt	"	0 0	7
Antimony	per ton	29	10 0
" (tartar emetic)	per lb.	0 0	8
" (golden sulphide)	"	0 0	10
Barium Chloride	per ton	6	10 0
Carbonate (native)	"	3	10 0
Sulphate (native levigated)	"	42/6	to 65/-
Bleaching Powder, 35 %	nett	6	5 0
Liquor, 7 %	"	3	10 0
Bisulphide of Carbon	"	12	0 0
Chromium Acetate (crystal)	per lb.	0 0	6
Calcium Chloride	per ton	2	5 0
China Clay (at Runcorn) in bulk	"	15/-	to 30/-

Coal Tar Products and Dyes:—

Alizarine (artificial) 20 %	nett per lb.	0 0	6 1/4
Magenta	"	0 3	9
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0 0	6
Benzol, 90's	per gallon	0 2	0
50/90	"	0 2	0
Carbolic Acid (crude 60°)	per gallon	0 1	10
" (crystallised 40°)	per lb.	0 0	6 1/2
" (liquid 95/97%)	per gallon	0 1	0
Creosote (ordinary)	"	0 0	2 1/2
" (filtered for Lucigen light)	"	0 0	3
Crude Naphtha 30 % @ 120° C.	"	0 0	10
Grease Oils, 22° Tw.	per ton	2	15 0
Pitch, f.o.b. Liverpool or Garston	"	0	18 0
Solvent Naphtha, 90 % at 160°	per gallon	0 1	7
Copper	per ton	48	5 0
Sulphate	"	16	10 0
Oxide (copper scales)	"	44	10 0
Glycerine (crude)	"	27	0 0
" (distilled S.G. 1250°)	"	42	10 0
Iodine	nett, per oz.	0 0	7 1/2
Iron Sulphate (copperas)	per ton	1	10 0
Sulphide (antimony slag)	"	2	0 0
Lead (sheet)	"	14	15 0
Litharge Flake (ex ship)	"	17	0 0
Acetate (white ")	"	23	0 0
" brown ")	"	17	0 0
Carbonate (white lead) pure	"	17	0 0
Nitrate	"	20	0 0

Lime, Acetate (brown) (ex ship)	per ton	5	7 6
" (grey) (ex ship)	"	5	7 0
Magnesium (ribbon and wire)	per oz.	0 2	3
Chloride (ex ship)	per ton	2	10 0
Carbonate	per cwt.	1	17 0
Calcined Magnesia	per ton	8	0 0
Sulphate (Epsom Salts)	per ton	2	1 0
Manganese, Sulphate	"	16	0 0
Borate	per cwt.	2	10 0
Ore, 70 %	per ton	3	10 0
Methylated Spirit, 61° O.P.	per gallon	0 1	0
Naphtha (Wood), Solvent	"	0	0 0
" Miscible, 60° O.P.	"	0	0 0

Oils:—			
Cotton-seed	per ton	16	10 0
Linseed	"	16	10 0
Stearine	per ton	22	0 0
Phosphorus (yellow)	per lb.	0 2	0
" (red)	"	0 2	0
Potassium (metal)	per oz.	0 3	0
Bichromate	nett per lb.	0 0	0
Carbonate, 90% (ex ship)	per ton	16	10 0
Chlorate	per lb.	0 0	3 1/4
Cyanide, 98%	"	0 0	10 1/2
Hydrate (Caustic Potash) 90 %	per ton	23	10 0
" (Caustic Potash) 75/80 %	"	19	15 0
Potash Hydrate Liquid 50 %	"	11	10 0
Nitrate (refined)	per cwt.	1	1 6
Permanganate	per cwt.	3	15 0
Prussiate Yellow	per lb.	0 0	5 1/4
Sulphate, 90 % (ex ship)	per ton	9	15 0
Muriate, 80 % (do.)	"	8	10 0
Silver (metal)	per oz.	0 2	3 1/2
Sodium (metal)	per lb.	0 2	9
Carb. (refined Soda-ash) 48 %	nett per ton	4	15 0
" (Caustic Soda-ash) 48 %	"	4	5 0
" (Carb. Soda-ash) 48 %	"	4	0 0
" (Alkali) 58 %	"	3	17 0
" (Soda Crystals)	"	2	5 0
Acetate (ex-ship)	"	10	15 0
Arseniate, 45 %	"	14	7 6
Chlorate	per lb.	0 0	4 1/2
Borate (Borax)	net, per ton	14	15 0
Bichromate	per lb.	0 0	3 1/4
Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	"	8	10 0
" (74 % Caustic Soda)	"	8	2 6
" (70 % Caustic Soda)	"	7	7 6
" (60 % Caustic Soda)	"	6	7 6
" (pure liquor 90° Tw.)	"	3	12 6
" 77/78 % powdered (99 % hydrate)	"	12	10 0
Bicarbonate	"	6	10 0
Hyposulphite	"	5	0 0
Manganate, 25%	"	15	0 0
Nitrate (95 %) ex-ship Liverpool	per cwt.	0 7	4 1/2
Nitrite, 98 %	per ton	26	10 0
Phosphate	"	10	10 0
Silicate (glass)	per ton	4	10 0
" (liquid, 100° Tw.)	"	3	7 6
Stannate, 40 %	per cwt.	3	2 9
Sulphate (Salt-cake)	per ton	0	19 0
" (Glauber's Salts)	"	1	7 6
Sulphide	"	6	15 0
Sulphite	"	5	0 0
Strontium Hydrate, 100%	"	10	15 0
Sulphocyanide Ammonium, 95 %	per lb.	0 0	5 1/4
Barium, 95 %	"	0 0	4
Potassium	"	0 0	6 1/4
Sulphur (Flowers)	per ton	7	10 0
" (Roll Brimstone)	"	6	10 0
" Brimstone: Best Quality	"	4	10 0
Superphosphate of Lime (26%)	"	2	5 0
Tallow (Beef)	"	18	10 0
Tin Crystals	per lb.	0 0	4 1/4
English Ingots	per ton	65	10 0
Zinc (Spelter)	"	17	17 6
Chloride (solution, 100° Tw.)	"	5	10 0
Sulphate, Crystal	"	5	2 6

there was at present no electrolytic process capable of producing 37% bleach he made a very grave mistake, as little inquiry would be needed to convince him that full strength bleach in very large quantity is now upon the English market, and in this respect at all events the new company, if formed, would start with no advantage. The beautiful story that one Rhodin cell will do as much work as five cells on any other principle is perhaps true in the same way that one large turnip may be bigger than five little turnips put together, but the inquiring mind may like to know how much absolutely and not relatively this wonderful apparatus is capable of doing. This information does not appear in the press reports of the Chairman's speech.

The idea of spending a million pounds on a Rhodin works to make 300 tons of bleach and 160 tons of caustic per day is a distinctly brilliant one, and has a strong after-dinner flavour. It would mean the practical snuffing out of all the existing bleaching powder concerns at one fell swoop, and as an effort of the imagination is worthy of a master of fiction. How this total capture of the chemical industry is to be effected with any advantage to the Rhodin shareholders it is difficult to see, but the chairman said that the undertaking would yield 33½ per cent. profit, and as he did not give any figures to damage his position we will refrain from arguing the point.

But what strikes us as a most serious matter for the consideration of intending investors is the possibility of someone to-morrow bringing out another patented apparatus differing from Mr. Rhodin's just about as much as Mr. Rhodin's differs from Mr. Castner's, and this process may and will go on indefinitely. Then what will be the result? All these concerns will be cutting one another's throats in just the same manner that the chemical processes have done hitherto, and the vitality or enduring power of any electrolytic concern will depend upon just the same factors that regulate the existence of other concerns. In other words, assuming equal business capacity in the management, that undertaking which will survive longest is the one which is least overloaded with capital. And here is the immediate danger. Electricity is the craze of the hour, and the speculative financier is using it to his advantage. Our readers will do well to bear in mind that the profits from electrolysis are much exaggerated, and that when the inventor and the syndicate have been satisfied, the unremunerative capital thereby introduced may easily make even a good electrolytic undertaking anything but a thing of joy to its shareholders. The fact of the matter is—though every budding venture of this kind tries to disguise it—that the market for bleach and caustic is in a most deplorable condition, and only on the most irrefutable evidence of its soundness would even a lunatic be justified in investing sixpence in a new concern. Where is the evidence in the case before us? The one expert report which we have seen published deals only with generalities—the apparatus is cheap, simple, and, in fact, very nice in every way. We don't say that it isn't, but these flattering statements want a good deal of support in the shape of definite verified figures, and we shall be "a bit suspicious" till such figures are forthcoming.

MESSRS. BRUNNER MOND'S DIVIDEND.—On Wednesday Sir John Brunner, M.P., presided over a meeting of the directors of Messrs. Brunner, Mond and Co., Limited, chemical manufacturers, at Warrington, Northwich. It was unanimously resolved to declare an interim dividend for the half-year ending September 30th of 20 per cent. (free from income-tax) on ordinary shares, and a dividend of 7 per cent. (subject to income tax) on preference shares.

SOCIETY OF CHEMICAL INDUSTRY.

SCOTTISH SECTION.

THE first meeting of the new session took place on Tuesday, October 26th, in Glasgow. Mr. George T. Beilby, F.I.C., chairman of the section, presided. This proved to be the best attended sectional meeting over a series of years, those interested in the mineral oil manufacture forming a powerful contingent. It may be said, indeed, that the entire industry was well represented. The announcement of the meeting said that the new chairman (Mr. Beilby) would address himself to a comprehensive view of the mineral oil industry—"Thirty Years of the Scotch Oil Industry," hence the large turn-out of the oil folks, Mr. Beilby being a recognised authority on this important subject. The first part of his treatment dealt with the evolution of the shale retort for the extraction of crude oil and sulphate of ammonia from the raw mineral, a field in which he himself had worked long, and to large purpose. The period of 30 years he divided into three sections, as illustrating this evolution. From 1867 to 1873 the old vertical and horizontal retorts, low of yield and high of cost in working, had it mostly all their own way. Between 1873 and 1881 the Henderson retort, with its greatly improved yield and largely reduced cost, held the first place, and was a main factor in the magnificent profits earned during that time by the Broxburn and some others of the companies. Then, he said, came the Young and Beilby retort, beginning with the year 1882 and still holding itself the most largely in vogue in the present year. The narrative of this evolution of the retort was strikingly seconded by screen illustrations, each type being shown in section, and explained by the lecturer; while at the close the whole series, all drawn to one scale, was rapidly deployed across the cloth, giving the requisite conception of evolution not only as regards planning, but dimensions as well. Summarising the economical results, the lecturer calculated that the cost of retorting and refining, on one ton of mineral, had been lowered during the thirty years from 10s. 7d. to 3s. 11d. This represents but a portion of the gain, however, for each new form of retort, besides cheapening the cost of production, increased the yield of products. Contrasting the two points of time, it is found that nearly three times the amount of sulphate of ammonia is now obtained; double the quantity of solid paraffin; more lubricating oil, and quite as much of burning oil, which originally was by a long way the chief product thought worthy of being looked after. Taking the output of the past year at 2,400,000 tons, the lecturer reckoned that 30 years ago it would have wanted something like £1,200,000 to work that quantity of stuff, more than it has actually cost, thanks to the vast improvements in the plant and procedures of the manufacture. A marvellous achievement, but unfortunately, as he pointed out, the benefit has not come, ultimately, to the shareholders, whose money it was that prompted the research after improvement, but to the consumers, owing to outside rivalry, and the disastrous lowering of the value of the finished products on the market. The Chairman announced that the Council of the Section had resolved to try the experiment of holding a few of the monthly meetings of the new session at places where actual chemical operations could be seen in progress. The next meeting, it is arranged, will take place within the works of the Broxburn Oil Company, Broxburn, when the subject of Mr. Beilby's opening paper will be further ventilated, and under still more practical auspices.

THE GENERAL ITALIAN EXHIBITION, 1898.—The Executive Committee of this Exhibition, to be held at Turin, call attention to the fact that, besides the Exhibitors, who have already made application, there are still many makers and manufacturers residing abroad, who entertain the idea of exhibiting either in the International Electricity Section or in the branch set apart for Italians residing abroad. It is therefore desirable that all these should not delay sending in their applications. All foreign builders may exhibit their machines or mechanical appliances in "Galleria del lavoro" if set in working order by Italian firms. It will be very easy for foreign machine builders to exhibit, as the expenses for carriage and freight are considerably reduced and those for Customs duty are suppressed.

ROCK SALT, SULPHUR AND OIL IN TURKEY.—Rock salt is the only mineral product which is very plentiful along the Red Sea coast in the Yemen, and which gives the Turkish Government some profit. Mr. G. P. Deney, consul at Jeddah, says:—"In my recent travels in the sub-districts of Mocha and Lohaya I found abundant indications of the existence of sulphur and iron, especially at a place about two days' journey from Lohaya, between Assab and Beni Hasan, and coal and iron are said to be found in a place near Sheikh Said. In the island of Farsan, which is about 100 miles northwards from Hodeidah, and about 10 miles from the mainland of Arabia, exist tar and a kind of petroleum. At Gozan, on the mainland of Arabia, end opposite to Farsan, is a kind of substance like Portland cement. If properly exploited, the Yemen could add much to the revenue of the Turkish Empire.

The Patent List.

It is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of Davis and Alfred R. Davis, who report professionally value of Chemical Patents.

NOTIFICATIONS FOR ENGLISH LETTERS PATENT.

for the Manufacture of Carbonaceous Compounds. T. Oddy. *Seap.* 23,330. October 11.
 Sulphide Ores. F. J. Rutter. 23,335. October 11.
 G. Beneké. 23,240. October 11.
 A. Zimmermann. 23,352. October 11.
 G. A. Witt. 23,353. October 11.
 Kilns. V. Hughes and E. D. Nicholson. 23,403. October 12.
 Generators. J. Riley and W. Lawson. 23,411. October 12.
 Heating Apparatus. W. H. L. Galloway. 23,428. October 12.
 Salt. A. MacNab. 23,473. October 12.
 Food. A. Lambiotte. 23,597. October 13.
 J. J. B. Benoit. 23,602. October 13.
 Feeding Apparatus therefor. A. Zimmermann. 23,604. October 13.
 Feeding Cakes. J. Evans. 23,656. October 14.
 Scales, Apparatus for. J. Evans. 23,657. October 14.
 Slag Wool. W. P. Ingram. 23,670. October 14.
 Heating Apparatus. C. J. Whittaker and W. C. Bryant. 23,787. 15.
 Calcium Carbide. C. J. Lundström. 23,793. October 15.
 Matters. A. Ashworth and J. Bürger. 23,816. October 16.
 Bunsen Burner. R. T. Glover and J. G. Glover. 23,902. Oct. 16.

ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

Abstracts are specially prepared for the Chemical Trade Journal, RIGHTS of publication are RESERVED. This is the earliest abstracts of Chemical and allied patents accessible to the

in Apparatus for Converting Nitric Peroxide into Nitric
 O. Guttman, 12, Mark-lane, E.C. Eng. Pat. 18,189. August 4.

Hitherto obtained from the de-nitration of waste acids, etc., weak and of a green colour. This new apparatus presents the constant stream of acid, which gradually grows stronger and more thorough absorption of the gases. The method adopted is as follows. The nitric peroxide obtained from an ordinary is passed through a bottle filled with broken glass, etc., to which, which are then forced by a compress air jet into two towers or a series of U pipes filled with broken glass. The use of this supplies the necessary oxygen as well as moves the gases in the towers the gases meet a current of water, and a certain nitric acid is formed, which runs off into a collecting tank. The absorbed gases next pass to a Guttman-Rohrmann condensing tower the pipes of which a supply of nitric acid from the cold is caused to flow. Any gases still unabsorbed are passed to the Rohrmann tower, and the acid liquor therefrom passed into a collecting tank. By this process the acid obtained is of a high strength, and the passage of the gases is sufficiently retarded to give the best yield. There are three figures.

Improved Method and Apparatus for Mixing and Conveying Acids in Nitroglycerine and other Manufactures. G. Kynoch and J. L. and A. T. Cocking, both of Lion Works, Witton. Eng. Pat. 22,717 (10th). October 13, 1896.

ing of the measures, the mixing and the delivery of the mixed by part of the works are accomplished by the use of compressed vacuum. The mixer is a horizontal cylinder with dished ends mounted by the two measuring vessels, which are connected by pipes and regulating cocks. The measuring vessels are thus drawing in the charge of acid. The connection with the pump is then cut off, and the acids run into the mixer, compressed air blown through a perforated pipe ensures a mixture. When mixed a cock in the bottom of the mixer is closed and the acid forced to any part of the works. There are two

in the Manufacture of Finely Pulverised Substances, especially in the Production of Portland Cement, Pigments, and the like. R. Hunter, 14, Cannebarn-road, Mary Hill, Glasgow. Eng. Pat. 22,717. November 5, 1896.

ment is merely a description of distribution of certain plant for the raw materials for the manufacture of cement, etc. From

a stone-breaker the material is carried in an elevator to an edge runner. Thence it is conveyed to mill stones and ground finely. The material is next elevated to an automatic feed hopper, which passes it into a revolving hexagonal sieve. The fine particles fall through into a store chamber, and the coarser particles pass out at the end of the sieve, and are returned to the mill stones. There is one diagrammatic sketch of the arrangement.

Improvements in the Treatment of Metallic Chlorides, such as those produced from Sulphide Ores. E. F. Turner, Adelaide University, Adelaide, S.A. Eng. Pat. 17,834. July 29, 1897.

This is an improvement on patent 15,749, 1896, which treated ores with gaseous and aqueous hydrochloric acid. By the improved method the chlorides so obtained are subjected in the fused state to fractional electrolysis. The gold, silver, and lead are thus removed. The zinc is then obtained by heating the residue under reduced pressure, the latter being obtained by a steam jet in the exit pipe from the retort. The zinc chloride is thus volatilised, and in contact with the steam is converted into the oxide, hydrochloric acid being liberated. The iron and manganese chlorides which are left are either subjected to a current of steam in revolving calciners or exposed to sulphur dioxide and steam in vertical cylinders. In either case the oxides are formed and hydrochloric acid set free for re-use.

SOUTH LANCASHIRE AND CHESHIRE COAL ASSOCIATION.

AT a meeting of this association, held at the Queen's Hotel, Manchester, on Monday, under the presidency of Mr. Walter L. Bourke, a presentation of silver was made to Messrs. C. Gidlow Jackson and William Johnson, members of the association, in recognition of their services to the association and the trade during the last session of Parliament, particularly in connection with the Workmen's Compensation Act. Mr. Alfred Hewlett made the presentation. Mr. Gidlow Jackson, in responding, said they were most anxious to keep alive the Lancashire and Cheshire Miners' Permanent Relief Society with which they had been connected so long, and it was a sad thing for them to reflect that after 24 years' work in connection with that society it would have to come to an end in June, 1898. He knew better than most people the good the society had done, and the incalculable loss which would result to the workmen by its being broken up. No Act of Parliament could replace the good which the society had wrought, nor continue the good relationships which it had cemented between employers and workmen. They had done all they could to minimise the evil effects of the Miners' Compensation Bill, and it had involved a vast amount of work, and more calculations than he should care to undertake again.—Mr. Johnson thanked the members most sincerely and deeply for the presents which had been made to him. His only regret was that their arduous labours in London had been attended by so little success. He thought, however, they had done some good, and taken some of the sting out of the Bill. Had it passed in the form in which it was first introduced, it would have been much worse for them, as coalowners and employers, though it was hard enough still. He shared the deep regret expressed by Mr. Jackson that in July next, they would be compelled to sever their connection with the Miners' Relief Society, which had done so much good. He was thoroughly at a loss to understand why the Government should have selected the coal trade to be the subject of such an unjust Act. To him it seemed most unfair that after their efforts for 24 years to keep up the relief society, and after they had done all that the Government thought they were doing by the Compensation Act, that the society should, as the result of the passing of the Act, be broken up.

ALLEGED RIVER POLLUTION IN CHESHIRE.—At a recent meeting of the Northwich Rural Council a report was read as to the alleged pollution of the Rivers Dane and Croco, from which large numbers of cattle in Mid-Cheshire drink. Messrs. Brunner, Mond, and Co., it was alleged, were polluting the Croco by discharging lime from their works at Middlewich. The firm wrote that the effluent from the waste reservoirs at these works was absolutely clear, and was seen by one of the company's directors a few hours after the visit of the inspector. When the clear liquid mixed with the hard water of the river it produced a precipitation, which it was not possible to alter. The Local Government Board had held an inquiry with reference to a similar case at their works at Sandbach, and they decided that the manufacturers were doing all they could. The inspector now reported that a recent inspection showed that the effluent was clear on entering the stream, but within 50 yards the water became perfectly white. The clerk said as the pollution was by liquid the Council would have to go to the Local Government Board to obtain permission to prosecute. Instructions were given that further inspection should be made.

Official Memoranda.

(From the Board of Trade Journal.)

NEW CANADIAN TARIFF.

Free List.

THE following is an abstract of the goods admitted free from duty under this tariff:—

Aluminium in ingots, blocks, or bars, ships' sheets or plates, alumina and chloride of aluminium, or chloralum, sulphate of alumina and alum cake, and alum in bulk only, ground or unground.
Ammonia, sulphate, salammoniac, and nitrate of ammonia; arsenic, bromine, cinnebar, cochineal, cyanide of potassium, and cyanogen or compounds of bromine and potassium for reducing metals in mining operations; iodine, crude; cryolite, oxalic acid; saltpetre.
Alizarine and artificial alizarine; aniline oil, crude, aniline salts and arseniate of aniline; annato, liquid or solid; aniline dyes and coal tar dyes in bulk or packages of not less than one pound weight.
Antimony salts; antimony, or regulus of, not ground, pulverized, or otherwise manufactured.
Resin or rosin in packages of not less than one hundred pounds, and resin oil.
Blast furnace slag.
Bones, crude, not manufactured, burned, calcined, ground, or steamed.
Boric acid, and borax, ground or unground, in bulk of not less than twenty-five pounds.
Chloride of lime, in packages of not less than twenty-five pounds weight; cobalt, ore of; oxide of cobalt, oxide of tin and oxide of copper; copper, precipitate of, crude; gypsum, crude (sulphate of lime); manganese, oxide, phosphorous; litharge; sulphate of iron (copperas); sulphate of copper; sulphur, crude or in roll or flower; tartar emetic and grey tartar; cream of tartar in crystals and argols; dry verdigris, or sub-acetate of copper, zinc, salts, and tartaric acid crystals.
Clays, including China clay, fire clay and pipe clay; gannister and sand.
Fertilisers, uncompound or unmanufactured, including phosphate rock, German mineral potash, bone-dust, bone-black or charred bone and bone-ash, fish offal or refuse, guano and other animal or vegetable manures.
Platinum wire and platinum in bars, strips, sheets, or plates; platinum retorts, pans, condensers, tubing, and pipe, when imported by manufacturers of sulphuric acid for use in their works in the manufacture or concentration of sulphuric acid.
Potash, muriatic and bichromate of, crude, caustic potash, and red and yellow prussiate of potash; also pot and pearl ash, in packages of not less than twenty-five pound weight.
Salt, imported from the United Kingdom or any British possession, or imported for the use of the sea or gulf fisheries.

ROUMANIAN PETROLEUM CONTRACTS AND FOREIGN CAPITALISTS.

A report has been received at the Foreign Office from H.M. Acting Consul-General at Galatz, containing a memorandum on the petroleum industry of Roumania, and on the abuses which have prevailed in the making of contracts for the working of petroleum, and which have resulted, in many instances, in heavy losses to foreign capitalists and investors, and been otherwise detrimental to what should be a flourishing national industry. Mr Liddell states that, since the beginning of the petroleum industry in Roumania there have been many foreigners who have invested their capital in the belief that they were likely to see large profits realised within a short time, but have found to their cost that their expectations were far from being fulfilled. Nor does the reason of the non-realisation of their hopes lie in the want of success of the workings, but in the way that they, in most instances, have allowed themselves to be the dupes of unscrupulous speculators.

The peasant proprietorship is so ill defined that even the most capable lawyers are often at a loss, when there is a question of concluding a contract for the leasing of the ground, to find a proper and valid basis on which to establish their claims without giving rise to further complications and ulterior troubles.

More especially in the petroleum-bearing districts of Campina, Bustenar, Cintgon, and Baicoi, there is a band of speculators who corrupt the peasants and destroy confidence.

Their mode of procedure has been, and still is, the following:—A speculator gets hold of some hundred peasant proprietors, whom he takes before the local tribunal; he begins by making them intoxicated, and then, without paying any attention to the title deeds of the properties which he has his eye on, induces them to sign fictitious contracts in exchange for which they receive a gratuity varying from £2. to £5. With one or two hundreds of such contracts in his pocket he goes abroad, and experiences but small difficulty in finding persons only too

ready to take up the business. After expatiating upon the richness of the ground to be worked, he produces the contracts he has brought with him and parts company with them at a very large profit to himself.

But, generally speaking, his buyers, far from entering directly into their new possessions, find the way beset with difficulties, and discover that to establish their proprietary rights legal proceedings must be undertaken in which lawyers' fees absorb their capital, until their patience is exhausted and their money wasted.

All the schemes for the development of the petroleum industry in Roumania that have lately been made in Holland or in Galicia have been based upon the most doubtful contracts where the ground to be worked was that owned by peasant proprietors.

Such proceedings are necessarily detrimental to the development of the petroleum industry of the country, and keep away capital which might otherwise be most usefully invested. For it is capital that is really wanted, and, given capital, proper undisputed possession of the ground, and capable management, there is no reason why capitalists and investors should not work the petroleum-bearing districts with profit to themselves and to the advantage of the national industry.

The evil that has hitherto flourished can be nipped in the bud, and this is possible, provided the peasants themselves can be induced not to enter into provisional contracts with speculators, and provided that the tribunals can be brought not to recognised contracts produced by agents unless the latter can produce an authentic power of attorney, to the effect that they are the genuine representatives of some duly-constituted society or bank.

Farther, foreign capitalists should under no circumstances whatever accept contracts made between speculators and peasants for leases of petroleum bearing ground without having absolute proof that the title deeds are genuine and give them full possession.

Foreigners who are anxious to place their money in the rich Roumanian petroleum workings should have no dealings with speculators; they can obtain necessary and reliable information by addressing themselves either to the Chambers of Commerce or to such "bureaux d'informations" as are officially recognised by the Ministry of Commerce, or to any bank at Bucharest or in the chief petroleum-bearing localities, as these institutions alone are able to give them trustworthy information, and such as will enable them to enter into possession of their proprietary rights without further trouble or annoyance.

All reports that come to hand in regard to the wealth of the petroleum-bearing districts of Roumania point to the fact that in this respect the country can compete with the richest petroleum districts of America, Galicia, and even Russia. An eminent authority who has lately had occasion to express an opinion on the positions of Bustenar, Campina, Menteor, and Solontz, is enthusiastic over the favourable geological position of these districts, which he qualifies as equal in all senses to those of Shodnica or Bakow.

As regards geological and geographical position, the petroleum bearing districts of Roumania can bear not only comparison with those of other countries, but, on account of their proximity to the River Danube, a distance varying from ninety to one hundred and twenty-five miles, should have a distinct advantage over other petroleum-bearing countries.

However, in spite of these natural advantages, the Roumanian petroleum industry has remained stationary and practically undeveloped up till quite recently, and this is all the more surprising seeing how enormously the petroleum industry has developed in Russia and Galicia.

The only plausible explanation is want of capital and initiative, and perhaps in no other European country is there such an absolute want of capital. Wealthy Roumanians prefer to spend their time and their money abroad, or busy themselves in politics, and foreign capitalists have up till lately had such unfortunate experiences in the petroleum business, and lost such considerable sums of money, that they have not unnaturally turned away from it in disgust.

But capital and good management are all the more essential because, once the petroleum is struck, transport, pipes, reservoirs, refinery, must all be thought of, especially as the consumption in the country itself is small, and besides has already been monopolised and organised by the Roumanian "Steana" Company, and export by sea must necessarily absorb large sums of money, as has already been the case in America and Russia.

THE INDUSTRIES OF CORFU.

The Belgian Consul at Corfu, in a report to his Government, states that native industries have made good progress in this island in the last few years.

Among the establishments enumerated are: A manufactory of playing cards, employing 120 workpeople, of whom 100 are girls, and capable of turning out 400,000 packs per annum; a steam factory of wax candles, turning out about 100,000 kilogs. annually, and employing 50 people, of whom 30 are women; a glove factory, founded 15 years ago, furnishing all the gloves for the army, and

ed by the high duties on foreign gloves; 3 steam flour mills, a soap factories; 2 establishments for the production of cognac; oil refineries; 1 ice manufactory; manufactories of cards, straw parasols and umbrellas, wooden chairs, carpets and cotton goods, porcelain manufactory, whose chief artist is a French painter. The barrels used in the export of wine and oil are made in the country and there is a considerable native production of solid high-class ware, made, however, of wood imported from other countries.

FOREIGN COMPETITION AND TECHNICAL EDUCATION.

BY IVAN LEVINSTEIN.

As a member of the deputation appointed by the City Council to visit certain Technical Schools on the Continent, and in our report to take position in regard to the so-called technical education has been set forth. Years ago I stated on various occasions that it was a fallacy to believe that an ordinary German workman was really more highly trained than our own, but that Germany's superiority was solely confined to secondary education and to scientific education of the highest grade. Indeed, stimulated by our own efforts to improve the comparatively recent date that Germany has paid greater attention to the technical training of her people in her so-called Fachschulen.

It is not my intention to discuss here whether the German system of Technical Schools, all of which are controlled by one head, in which the curriculum is adapted to the special industrial needs of each district, is better than our own system, which principally aims at building up many Technical Schools as possible, to which many subjects as names can be found for, regardless of the special requirements of the locality in which they are established. Moreover, these schools are controlled by authorities who frequently possess very little knowledge of the subjects, and who act independently of each other without any central control.

In spite of being an ardent advocate for improved education, primary, scientific, and technical, my object is more to warn people not to look solely and exclusively to better education for success in the industrial warfare, or to attribute Germany's industrial progress solely to the fact of the better education of its people. Science is a great deal for Germany, but it certainly does not solely account for her phenomenal progress in many branches of industry. And that Germany as far back as 1717 established compulsory technical education. Towards the end of the Napoleonic wars, we find that not inconsiderable efforts were made to re-organise her military system, so great attention was devoted to improving secondary education and the highest grades of scientific education.

In spite of all her great achievements in the field of knowledge, her position and her industrial progress—even as late as 1870—were quite insignificant as compared with ours.

Her prior education alone, therefore, cannot account for the remarkable industrial progress of the German people. Germany before the Franco-German war lacked two great factors necessary for the development of her resources—namely, capital and enterprise. Enterprise is a result of self-confidence and self-reliance. The great success won on the battlefield restored to the German nation this self-confidence and awakened enterprise hitherto unknown. It was also a result of the Franco-German war that, directly and indirectly, capital flowed into the country. The national enterprise aroused, the German nation commenced its industrial warfare under favourable conditions. Not merely did it possess a large staff of trained men in all branches of science, but at the command of able leaders there stood a highly-disciplined army of workers—by no means better technically trained than our own, but trained to obey and command, trained systematically and methodically in order, cleanliness, punctuality, and subordination.

The Government was further intensely anxious after this great war to develop the trades and industries of the country, and this wise policy certainly succeeded in its object.

Not laws were enacted which have been of great advantage to Germany's home and foreign trade; the railway system was largely developed by the Government, and low rates were in many instances thereby reduced, whenever it was shown that such reduction would benefit trade. The development of various industries was aided by special tariffs, and another advantage was very much gained—at least at the time referred to.

These matters are outside of the domain of science, but each and every one contributed more or less to Germany's present position.

Let us look what we have to set off against those items:—(1) Freedom of trade; (2) higher wages; (3) gigantic strikes and lock-outs; (4) ever-increasing grandmotherly legislation harassing those engaged in industrial pursuits; (5) higher freights, rates, and taxes; (6) Patent laws apparently revised for the benefit of our foreign rivals, to the disadvantage of ourselves.

We will now briefly consider our position with regard to some of these German advantages. As far as Germany's fiscal policy is concerned, I believe that it has been of advantage to Germany, and that it may be so yet, but its introduction would not suit our interests. In regard to the question of lower wages this need not seriously trouble us in the future. Germany's fiscal policy, combined with constantly increasing taxation, owing to increased military expenditure, which will next be followed by increased naval expenditure, and growing prosperity on the part of those engaged in trades and industries, are sure to advance wages; indeed, in some instances, labour already commands a price as high as in this country. The highly disciplined army of workmen is, I consider, a distinct advantage to an industrial country. Now the better disciplined army of workers we have not got, and probably do not want to get, certainly not at the price Germany pays for it, and protective tariffs do not suit us; but as far as cheap freights and sensible patent laws come in question, on this point I am sure we shall all be agreed. The Ship Canal has been of great service in breaking the monopolies of railway companies in our district, thus substantially reducing local freights, and if the Canal cannot pay interest for another twenty-five years, it still will have been of great service to our trading community. But the whole scheme of inland navigation requires revision, and ought to be taken up by all the Chambers of Commerce in this country. As to patent laws, I am bold enough to say that the chemical industry of Germany (especially that of coal tar derivatives), in spite of all other advantages, would not be to-day in such a prominent position but for the German patent laws, which are enacted and administered—not as with us to principle—but *in fact* for the protection of German industries and traders.

That the people of this country are by nature as gifted and as well adapted for the acquisition of scientific and technical knowledge as their German *confreres* there can be no doubt, and what we can do in science teaching may well be illustrated by reference to Owens College. Not many years ago it was a well-accepted rule that in order to turn out a good chemist the Owens College student must go abroad for a couple of years to complete his chemical education. But what is our position to-day? The chemical professors by research work; by inducing the young men to continue their studies at the College after having taken their degrees; by judiciously bringing themselves into touch with industries; and making themselves thoroughly acquainted with industrial problems instead of, as formerly, keeping aloof from those engaged in the industry, have succeeded in turning out chemists quite as well trained as those who have studied an equal term at any German university. To this I can testify by my own experience. Such a result must be most gratifying not only to Manchester people, but to the pride of every Englishman.

The Owens College has recently received some very generous gifts towards the establishment of a Physical Laboratory, though the amount of money promised is still not nearly sufficient to place this department in line with the Chemical School. It is to be hoped that the splendid generosity of the two donors may be followed by other gifts, so that Manchester at least may be able to say that she has succeeded in educating the young men in our own country, in the two most important branches of science—namely, chemistry and physics—in a manner quite equal to the education obtainable at any German or Swiss university or polytechnicum.

The importance of the application of electricity, not only to lighting and motive power but to the production of metals, chemical products, colouring matters and medicinal preparations, cannot be over-estimated; and with characteristic forethought large and well equipped electrical laboratories have been established in Germany, and are at the present time occupied with the solution of these problems. We are practically doing nothing in this direction, and one day we may be found napping if we do not rise to the occasion. It is earnestly to be hoped that in the contemplated new Physical Laboratory provision will be made for a special research department for electro-chemical work.

Now, with the splendid results already obtained at the Owens College, and by legislation wisely assisting in the removal of serious grievances on part of those engaged in trade and industry, we shall soon be in a position to meet our foes and rivals on equal terms, when victory will rest with those who possess the most dogged perseverance and endurance, in regard to which qualities at least, we need not fear our most determined opponents.

THE SMIDTH CEMENT MILL.—Messrs. William Johnson and Sons, Castleton Foundry, Armley, Leeds, have recently obtained from Messrs. F. L. Smidth and Company, of Copenhagen, the sole right in the British Isles for the manufacture of their Patent Tube Mill, which has made such a revolution in the cement trade during this last two years. We understand that the firm will be ready for placing these on the market at the commencement of the New Year.

THE CONCENTRATION OF VITRIOL.

In a recent issue of the *Zeitschrift für Angewandte Chemie*, Herr E. Loew reviews the systems in use for the production of concentrated acid from chamber acid, and groups the methods of concentration as follows:—1, by distillation; 2, concentration by means of air at a temperature when the acid possesses considerable vapour tension; 3, concentration by crystallising the monohydrate from high-strength acids.

A variety of apparatus has been tried for the concentration of sulphuric acids by distillation, the stills being constructed of platinum, gilded platinum, glass, porcelain or iron, but those made of platinum continue to find most favour. The methods of concentration commonly employed are costly, inasmuch as the vessels in which the concentration is carried out become defective quickly.

It is well known that sulphuric acid may be concentrated by means of hot air, the chief aim being to saturate the air with aqueous vapour and allow the concentrated acid to flow off. It is not essential that the acid should be maintained at its boiling point, as concentration will take place at lower temperatures with absolutely dry air. However, the higher the temperature the better, as the vapour tension increases the nearer the boiling point is approached. The intensity of the work of concentration is determined by the difference between the absolute and maximum vapour tension of air and the vapour tension of the acid. The rate of concentration is determined by (1) the heating surface; (2) the volume temperature and dryness of the air; (3) loss of radiation and conductivity.

To make a calculation of the rate of concentration the following conditions are presupposed. The acid to be concentrated has a temperature of 20° C., and contains 64.5% of monohydrate. The air leaves the apparatus saturated with aqueous vapour at 80° and 760 mm. tension. The finished acid is at its boiling point, and contains 95.6% of monohydrate. The air has a temperature of 20° at 760 mm. tension. From these figures the amount of heat required to produce 95.6% of acid from 64.5% may be calculated, and it will thus be found that 100 kilos. of acid require 49,500 cal. If, under the same conditions, the air should leave the apparatus saturated at 50.6°, 51,800 cal. would be required. On the other hand, saturated at 90° C., only 48,900 cal. are necessary.

The presence of carbonic acid in the gases, when obtained from a direct fire, has scarcely any influence on the figures quoted, whereas the presence of water, formed by the combustion of any material used for firing would naturally be disadvantageous.

It is immaterial, theoretically, whether the heat be supplied by means of air or of sulphuric acid. When concentrating in lead vessels, the acid is heated to 130-150° C., and the air is allowed to heat itself and absorb aqueous vapour. By this means, however, it is impossible to saturate the air with aqueous vapour. Even under the most favourable conditions the air will only be so far saturated that its tension for steam is equal to the vapour tension of the hot dilute sulphuric acid. The temperature of 140° C. is rarely exceeded in lead vessels, at which temperature the tension of an acid of 60° B. is inconsiderable, wherefore it is advantageous to cover such vessels in, thus making it impossible to allow the air to escape at a temperature of 80-90° C. In Kessler's apparatus the escaping air is caused to meet the acid to be concentrated, when it is possible for the air to have a higher tension than that of the acid to be concentrated, with which the air was at last in touch. However, practically it is impossible to utilise the air in such a manner that it shall escape saturated with moisture, and it is therefore always necessary to employ an excess over the theoretical amount. This, however, still permits of a good utilisation of the heat supplied and a production of an acid of any strength up to 98°.

TANK RESIDUES IN ELECTROLYTIC COPPER REFINERIES.

By EDWARD KELLER.

THE production of electrolytic copper and its separation from other metals by means of the electric current, was first established on a commercial scale by James B. Elkington, of England. In two patents, No. 2,838, Nov. 3, 1865, and No. 3,120, Oct. 27, 1869, he laid down all the essential points of the processes which guide the operations at the present day.

The original object of the process was mainly the separation of the precious metals from the copper. The production of a pure copper from the crude metal is, however, now equally important. The process may be described briefly as follows: The crude copper is cast into anodes of generally six to eight square feet by one to one and one-half inches in thickness. These are suspended in tanks, alternating with thin sheets of pure copper, as cathodes, one to two inches apart. Of the cathodes there is one more in number than of the anodes. In the tanks the electrolyte, in which anodes and cathodes are submerged, is forced to circulate in order to maintain uniform density. This electrolyte

is said to be generally a solution of three per cent. copper (as sulphate) with six per cent. of free sulphuric acid.

Each anode is connected with the conductor from the positive pole of the dynamo, each cathode with the negative. If the number of anodes in one tank be n , we have n branches of the electric current from the positive pole, and $n+1$ from the negative. Anodes and cathodes being otherwise insulated, the current must pass from anode through the electrolyte to cathode, dissolving the copper of the former and depositing it on the latter. The same current passes through a series of tanks, which may number many hundred.

The system described is called the "multiple." The "series" system is a later invention. It differs from the former, that in each tank there is at one end but one anode connected with the positive pole, and at the opposite end but one cathode with the negative. The space between is filled with rolled copper plates, set vertically, all a certain distance from each other. Electrolyte and circulation are the same as in the other system. When the electric current passes through this system, each surface of the individual plates facing the anode becomes a cathode surface, and that facing the cathode becomes an anode surface, so that the copper dissolved on the anode surface of each plate is deposited on the opposite or cathode surface of the next plate.

Details of the series system, with illustrations may be seen in the papers of the United States patents No. 377,487, Feb. 7, 1888, and No. 459,838, Sept. 22, 1891, secured by Mr. Edward S. Hayden, of Waterbury, Conn.

The precious metals and part of the impurities of the dissolved anodes in either system fall to the bottom of the tanks, forming there a sediment or residue, frequently also called slimes, mud, etc.

It is the object of this paper to show how some of these latter products are composed, and to what extent the various impurities in the anode copper take part in their formation.

In the following are given partial analyses (oxygen and hydrate water were not determined) of residues from copper derived from ores from Butte, Mont., as also the composition of the corresponding anode copper. The copper of I. was made by the reverberatory, of II. by the converter process:—

I.		Anode copper.
Residues.		100.1 ozs.
Ag....	53.894 per cent. = 15718.7 ozs.	
Au....	0.2959 " " = 86.3 "	
Cu....	11.010 " "	
Pb....	0.910 " "	0.0093 per cent.
Bi....	3.930 " "	0.0320 " "
Sb....	6.250 " "	0.0651 " "
As....	2.107 " "	0.0586 " "
Se....	0.394 " "	Se and Te.. 0.0098 " "
Te ..	1.174 " "	
So ₄ ..	5.268 " "	
H ₂ O* ..	2.365 " "	
II.		Anode copper.
Residues.		100.47 ozs.
Ag....	55.150 per cent. = 16085.04 ozs.	
Au....	0.198 " " = 57.749 "	
Cu....	13.820 " "	
Pb....	2.070 " "	
Bi....	0.340 " "	0.0035 per cent.
Sb....	2.440 " "	0.0510 " "
As....	1.090 " "	0.0180 " "
Se....	0.718 " "	
Te ..	0.892 " "	
Fe ..	0.800 " "	
So ₄ ..	10.680 " "	
H ₂ O ..	2.604 " "	

The figures in I. represent the average or nearly a one year's run; in II. a three months' run in the same refinery.

In the formation of these residues the anodes contribute all their contents in silver, gold, selenium, and tellurium. From any one of these elements we are, therefore, enabled to compute their degree of concentration in the residues, and to figure the amount of partial deposition therein of the other elements.

Since silver constitutes by far the greatest quantity, and consequently its determination being the most accurate, it is best to proceed from it. We then have:—

I.		Anode copper.	Concentration.
Residues.		Ounces.	
Ag	15718.7	100.1	157
II.		Anode copper.	Concentration.
Residues.		Ounces.	
Ag	16085.05	100.47	160

* The sample was dried at the temperature of boiling water, and the remaining water determined at 250° C.

Dividing the percentages in residues of partially deposited elements by the figures for concentration, we obtain the percentages of the original quantity in the anodes deposited in the residues. The difference between this and the total contents in the anodes is the amount gone into solution in the electrolyte. From the latter, practically all the copper dissolved from the anode is deposited on the cathode, carrying with it but a few per cent. of the impurities in solution.

Proceeding according to the above, we obtain the following:

I.

	Contents of anodes. Per cent.	Amount of original contents in anodes gone into residue and solution.	
		In residue. Per cent.	In solution. Per cent.
Cu	99.3	0.07	99.93
Bi	0.0320	78.22	21.78
Sb	0.0651	61.14	38.86
As	0.0586	22.90	77.10

II.

	Per cent.	Per cent.	Per cent.
Cu	99.4	0.086	99.914
Bi	0.0035	60.71	39.29
Sb	0.0510	29.90	70.10
As	0.0180	37.84	62.16

Lead is not considered in these figures, because lead-lined tanks and lead sulphate, carried by the commercial sulphuric acid employed, render the obtaining of correct results impossible.

There is little similarity between the compositions of I. and II. In I. the quantities of bismuth, antimony, and arsenic in the anodes are not very widely different. Bismuth shows the least solubility, arsenic the greatest. In II., where antimony greatly preponderates in the anodes, that element also shows the greatest solubility.

The ratio of selenium and tellurium in the two samples of residues may be worthy of notice. We have for I., 1 : 3; for II., 7 : 9. The current opinion, that selenium is merely a minor companion-element to tellurium in our western copper, seems thereby proven to be erroneous.

The ratio of the two elements in the anode copper is without doubt the same, and as they have never been separated from copper for quantitative determination individually, it can readily be shown by dividing their percentages in the residues by the figure of concentration what their quantities are in the corresponding anodes. We find:

IN ANODES.

	I. Per cent.	II. Per cent.
Se	0.00251	0.00449
Te	0.00748	0.00558
Total	0.00999	0.01007

The total of the two elements thus calculated, 0.00999 per cent. for I., corresponds closely with the actual amount, 0.0098 per cent., found in the anodes. For II. no direct determination was made in the anodes—*four. Am. Chem. Soc.*

Trade Notes.

ANALYSES OF INFUSORIAL EARTH.—F. W. Smither, in *American Chemical Journal*, 19, 235-236, reports three analyses of infusorial earth from Richmond and King George counties, Va., and Calvert County, Md. The second is of exceptional purity, containing 65.83% of amorphous silica. The chief impurities are quartz and clay, with only traces of lime and magnesia.

KANSAS GYPSUM.—E. H. S. Bailey and W. N. Whitten, in the *Kansas University Quarterly*, 6, 29-34, gives 12 analyses of gypsum from Kansas. These show that the material is in the main of a high degree of purity, the majority of the analyses closely approximating the theoretical composition of gypsum. The chief impurities are calcium and magnesium carbonates.

FIRE AT A COLOUR WORKS.—A fire occurred last week on the premises of Messrs. Schloessers and Co., Crown Dry Colour Works, in Wheathill-street, Salford. Mr. Superintendent Bentley and his staff turned out, and on arrival at the works they found several casks in the basement on fire. Jets were quickly got to work, and the firemen, after being engaged for some time, succeeded in extinguishing the flames, but not before considerable damage was done.

WHERE WAS THE OXYGEN BOTTLE?—At Wrexham Gasworks, recently, an escape was discovered in the purifier house, and Samuel Hesketh, assistant engineer, going into the cellar underneath to plug up the hole from which gas was escaping, was overcome. T. B. Walker, son of the manager, made a gallant attempt to rescue him, as did also Henry Perrin, stoker, but both became insensible. Hesketh was quite dead when eventually got out, but Walker and Perrin recovered.

THE SALT TRADE.—There are evidences of marked improvement in the Cheshire salt trade, which last month showed a decrease as compared with the corresponding period of last year of nearly 11,000 tons. Four additional pans have been started at Birkenhead Works, Winsford, and recently a new steamer, which is the largest on the river Weaver, and has made her trial trips this week, carried over 400 tons to Liverpool. After a lengthy period of depression, revival will be welcomed.

DYNAMITE IN THE TRANSVAAL.—According to information received from the Transvaal, the State Attorney has advised the Government that it is within their power to cancel the dynamite concession. The dynamite company are stated to be making overtures to grant larger reductions than those offered in the Volksraad Committee's report. The latter is universally condemned at Johannesburg, and a meeting of commercial men has been held urging the adoption of the Industrial Commission's recommendations in their entirety.

SUBSIDENCES IN THE SALT DISTRICT.—A meeting was held at Northwich recently in reference to the distribution of nearly £1,400, paid to the treasurer of the Property Owners' Association by the Salt Compensation Board. The money, which is part of the first levy upon brine pumpers under the Compensation for Subsidence Act, will in accordance with that measure be divided *pro rata* among those who for nearly ten years bore the burden of financing the promoters of the bills to secure relief for the enormous damage occasioned by brine pumping.

PREPARED MANGANESE AND ALLOYS.—Two neat pamphlets have been sent us by Messrs. Geo. G. Blackwall, Sons, and Co., of The Albany, Liverpool. One deals with the use of prepared manganese in brick and terra cotta making. Many useful hints are given on the manufacture of coloured bricks and similar goods. The second pamphlet explains the uses and properties of iron, chromium, nickel, and tungsten alloys, such as ferro-chrome, ferro-tungsten, ferro-nickel, ferro-molybdenum, chrome-nickel, tungsten-nickel, and molybdenum-nickel, of which the firm make specialities.

EXPLOSION AT A LABORATORY.—An explosion, resulting in considerable damage to a building and injury to two young gentlemen, recently took place in Wolverhampton, in the grounds of Mr. T. H. Hickman, Douro House, Waterloo-road. Mr. Hickman is the principal of the local firm of Messrs. Gaunt and Hickman, wholesale manufacturing chemists, and a building at the back of his house adjoining Molineux Alley is used as offices and as a chemical laboratory. Two of Mr. Hickman's sons—Mr. Thomas Moore Hickman and Mr. Frederick Charles Hickman—were here engaged in making experiments, and while using a cylinder which had been tested up to a pressure of 50 lb. to the square inch, the vessel exploded with a report which was heard all over the neighbourhood. The roof of the building was blown away and the outer walls in Molineux Alley dashed down, while the young men were badly bruised and burned. Dr. Green, who resides in Waterloo-road, was sent for. Both were burned about the head, face, and neck, but he found that the force of the explosion had affected Mr. T. M. Hickman more than his brother. The contents of the laboratory were completely destroyed, and judging from the force of the explosion and the damage done it is surprising that the two young men were not killed outright. The windows of a building attached to Molineux Hotel were shattered. As the result of the explosion the contents of the laboratory were set on fire, but on the police fire-brigade being called in the flames were quickly suppressed. It was afterwards found that portions of the cylinder had been projected into a court in North-street. The damage is estimated at about £500.

MORE SOAP "LIMITED."—Phillips, Hoskins and Co., Limited, with a capital of £60,000, in 12,000 shares of £5. each, has been formed to acquire, carry on, and develop the business of Phillips, Hoskins and Co., soap manufacturers, carried on at the Frome Bridge Soap Works, Bristol, together with the freehold and leasehold premises, plant, machinery, trade-marks, stock, goodwill, &c. The premises are situated in River-street, adjoining the River Frome and Bull-lane, Bristol, the greater part being freehold. The works have total frontages of 322 ft. to River-street and 102 ft. to Bull-lane, and comprise soap factory, dry soap department, glycerine factory, boiler-houses, stores, offices, smithy, coal-bunkers, frame rooms, grease and resin stores, packing department, and large yard, and are within a short distance of the railway stations. The plant and machinery include four horizontal steam boilers, three steam engines, iron and wood frames, milling plant, polishing soap plant, dry soap plant, glycerine plant, tanks, bins, stoves, pans, shafting, &c. The price to be paid for the property, including the freehold and leasehold premises, plant, machinery, fixtures, goodwill, and the whole of the stock-in-trade, &c., has been fixed at £31,500. The vendor stipulates for the right to apply for and have allotted to him one-third of the share capital. This will leave a working capital of £38,500. Applications are invited for the whole of the shares, and the directors also offer for subscription 200 debentures of £50. each, bearing interest at 5 per cent. per annum, payable half-yearly, and redeemable at a premium of 10 per cent. The debentures constitute a first charge on the freehold and leasehold premises, plant, machinery, and other assets of the company.

ACETYLENE ILLUMINATION.—Totis, in Hungary, is the first European town illuminated by means of acetylene gas, which is being used in the principal streets, squares, etc., and even in some of the suburbs. The new system of lighting is said to have proved, up to the present, quite satisfactory.

SOCIETY OF CHEMICAL INDUSTRY (London Section). The first meeting of the session 1897-98 will be held at the Chemical Society's Rooms, Burlington House, on Monday, November 1st, at 8 p.m. The following papers will be read: (1) "The adulteration of Portland cement," by Messrs. W. H. Stanger, M.I.C.E., and Bertram Blount, F.I.C. (2) "An improved adjustable drip proof Bunsen," by W. P. Evans, M.A., Ph.D.

MESSRS. A AND F. PEARS (LIMITED).—The report of the directors, made up June 30, states that the net profit for the year (after carrying £3,864 to depreciation fund) was £62,046., making with the sum carried forward a total of £66,994. Deducting debenture interest and interim dividends on preference and ordinary shares, and carrying to reserve fund the sum of £5,000., there remains a balance of £35,594. Out of this amount the directors recommend the payment of a full dividend for the half-year on the preference shares, of a dividend for the half-year at the rate of 12 per cent. per annum on the ordinary shares, making 10 per cent. for the year, and of a dividend for the year ended June 30th, 1897, at the rate of 7½ per cent. per annum on the deferred ordinary shares, leaving a balance to be carried forward of £2,744. 14s. 8d.

THE HENCKE-CUNLIFFE SLUDGE PROCESS.—The cost of working the steamers in which the London County Council sends its sludge out to the North Sea comes to over £27,000 per annum, and it is therefore natural that the Council should have its eyes and ears open for any more economical plan of dealing with the sewage sludge. It seems that a drying plant is now being erected at Rotherhithe. The sludge is pumped into hollow rotating cylinders, which are heated by hot air, and these film the sludge on their face and evaporate the moisture. The dried sludge is then automatically scraped off and falls into revolving pans and further evaporated, after which the sludge is automatically discharged upon machinery that presses it into fuel blocks ready for consumption in furnaces. These are all the particulars which are announced regarding the new invention so far.

SULPHATE AS A FERTILISER FOR TURNIPS.—The judging in the turnip growing competition for prizes offered by Messrs. James Ross and Co., Linmewhall Chemical Works, Falkirk, has now been completed. The firm offered £10. as premiums for turnips grown with manure of which sulphate of ammonia has formed a part, and to which no nitrate of soda has been applied, either by itself or in the form of a compound. This amount was divided into three prizes for Swedish and three prizes for yellow turnips, and the judges—Messrs. Alex. Simpson (Westmains, Falkirk), Archibald Cuthill (Gateside, Bonnybridge), and Robt. Bowie (Gilmecrowland, Linlithgow)—have given their awards as follows:—Swedish turnips: 1, W. T. Malcolm, Dunmore Home Farm; 2, Alex. Clark, Stonehouse; 3, James Ballantyne, Avonbank; commended, James Fleming, Carmuir. Yellow turnips: 1, W. T. Malcolm, Dunmore Home Farm; 2, John Learmonth, Awells; 3, Alex. Taylor, Longdyke; commended, James Ballantyne, Avonbank. Competition in both classes was very close, some of the prize lots of Swedish weighing 25 to 27 tons per acre, and some of the yellow 28 to 31 tons per acre.

LAMP AND STOVE FATALITIES.—A woman named Daly, of Burnley, was burnt to death recently by the bursting of a petroleum lamp. She upset the lamp and set her clothing on fire. She was badly burnt, and died in a few hours.—Considerable damage has been done to the premises occupied by Mr. E. H. Solomon, in Dean-street, Commercial-road, E., by a fire caused by the upsetting of a mineral oil lamp.—Premises in Westbourne Grove, W., jointly occupied by Mrs. Whittle, baby-linen warehouse, and J. Rosenberg, builder and decorator, caught fire recently in consequence of a mineral oil stove being upset. The building was seriously damaged.—In another case three hydrants were required by firemen in dealing with an outbreak of fire caused by the explosion of a mineral oil lamp on the premises of Mr. J. Richardson, iron and timber merchant. A corrugated iron building was severely damaged.—A woman at Staines was attending to a lamp when an explosion occurred. Her hair was down at the time, and it was entirely destroyed, her head, face, and hands being considerably burned. She suffered greatly from shock, but a hopeful view is taken of her case. Inquiries as to the quality of the petroleum used in the household show that it was of the cheapest kind.—The East Lancashire coroner has been informed of the death of Ellen Pickles, aged twenty, a caravan dweller. She was left alone in a caravan at Colne a few days ago, and retiring to rest blew down the chimney of the petroleum lamp, which exploded and set the van on fire. A number of people, seeing flames, burst open the door, and rescued her. She died from her injuries.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols have been moving more freely at 2s. for 90's and 50/90's. For November-December 90's have been done at 1s. 11d. Carbolic acids are not very strong, crystals being weak at 6½d.; crude remains at 1s. 10d. Naphthas remain about the same, with crude at 10d. and solvent 1s. 7d. Grease oils unchanged. Anthracene shows no change. Pitch is not so fluctuating, at 20s., f.o.b. East Coast.

Sulphate of ammonia is very firm. There has been an active market, while the state of the supply is beginning to impress buyers. Prices are higher and firm at all ports, closing values being:—Beckton £8. 7s. 6d., London outside makes £8. 7s. 6d., Liverpool £8. 6s. 3d., Hull £8. 5s., Leith £8. 7s. 6d., all prompt. For January-June £8. 12s. 6d. is lowest quotation at Leith. Nitrate of soda quiet.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade general demand is good both for home and export, and prices are well maintained. The tendency, however, is lower both on bleaching powder and caustic soda for future delivery. Spot quotations, however, for caustic soda, 10 ton lots, f.o.b. Liverpool, are:—77% £8. 10s., 74% £8. 2s. 6d., 70% £7. 7s. 6d., 60% £6. 7s. 6d. nett per ton; bleaching powder, £6. 7s. 6d. to £6. 10s. f.o.b., and £6. to £6. 2s. 6d. f.o.r. Lancashire works. Ammonia alkali is held steady at £3. 17s. 6d., bags f.o.r. both for prompt and forward delivery. Soda crystals and bicarbonate are unchanged. Chlorate of potash is lower at 3¼d to 3½d per lb. Soda, 4½d. Saltcake is selling more freely at 19s. to 20s. f.o.r. Sulphur, £4. 12s. 6d. f.o.r. Sulphate of copper has been rather easier during the week, but again shows a firmer tendency at £16. 7s. 6d. to £16. 10s. f.o.b. for prompt and early delivery. Yellow prussiate of potash dearer at 5½d. to 6d. per lb. Cyanide of potassium advanced to 11¼d. per lb. Carbonate of potash quiet at £16. 15s. for 90/92%. Caustic potash offering at lower price for forward contracts. White powdered arsenic rather firmer at £21. 10s. to £21. 15s. Brown acetate of lime firmer at £5. 7s. 6d. to £5. 10s. c.i.f. Acetate of soda lower. Other acetates and acetic acid unchanged. Nitrate of soda is still a depressed market at 7s. 3d. to 7s. 4½d. per cwt. Aniline oil and salt are firm for prompt delivery. Carbolic crystals have a lower tendency. Sulphocyanides quiet. Borax continues to droop. Zinc salts are higher. For miscellaneous chemicals the general tone of business is quiet, and prices all round at a low level.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron: Scotch warrants closed at 45s. 9½d.; Middlesbro', 42s. 10½d. cash; and hematite, 48s. 7½d. Copper firm: Chili bars, G.O.B.'s and G.M.B.'s, closed at £48. to £48. 5s. cash, and £48. 6s. 3d. to £48. 11s. 3d. three months. Tin steady: Straits closed at £62. 8s. 9d. to £62. 18s. 9d. cash, and £63 to £63. 10s. three months; Australian, £63. 10s.; English ingots, £66. 10s. Lead steady: Spanish, £13. 10s. to £13. 12s. 6d.; English, £13. 15s.; Silesian spelter, ordinary, £17. 17s. 6d. Nickel, 1s. 2½d. Antimony, £29 to £29. 10s. Quicksilver: First hands, £7; second hands, £6 19s. Copper shares steady: Cape, 2½ to 2½; Copiapo, 1¼ to 2; Libiola, 2¼ to 2¼; Mason and Barry, 2½ to 2½; Rio Tinto, 25¼ to 25¼; Tbarsis, 6¼ to 6¼.

GLASGOW, WEDNESDAY.—Market firm, and a good business. Scotch done at 45s. 9½d., 45s. 9d., and 45s. 9½d. cash; also at 45s. 11½d., 45s. 11d., and 46s. one month; buyers, 45s. 9½d. cash; sellers, 45s. 10d. Cleveland, buyers, 42s. 10½d. cash; sellers, 42s. 11d. Cumberland hematite done at 48s. 8½d. to 48s. 7½d. cash; also at 48s. 11d., 48s. 9½d., and 48s. 10d. one month; buyers, 48s. 7½d. cash; sellers, 48s. 8d. Middlesbrough hematite, buyers, 49s. 3½d. cash; sellers, 49s. 6d.

REPORT ON MANURE MATERIAL.

A quiet market has again to be recorded, values remaining very much as last reported. The demand for high grade mineral phosphates for Continental and Baltic ports continues, but for United Kingdom there is very little demand at present prices. Quotations for South Carolina and Algerian are unchanged. There is inquiry for East India bone meal, but buyers hesitate to pay £3. 17s. 6d. per ton, as quay, the price asked for November-December shipment. Crushed

Kurrachee bones hang fire at £3. 17s. 6d., ex store. Nitrate of soda is unchanged, on spot, at 7s. 4½d. for good up to 7s. 6d. per cwt. for fine quality. In the forward position there has been more interest, and some advance has been paid.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is quiet but steady. Lagos has been done in small quantities at £19. 15s. for spot, and Benin at £17. 5s. Olive keeps firm, with small sales of Candia at £32. 5s. per ton. Linseed keeps much the same, Liverpool makes in export casks being quoted 15s. 9d. to 16s. 6d. cwt. Cottonseed is steady with prices of Liverpool refined unchanged from 15s. 6d. to 16s. 6d. cwt. Though castor is quiet, prices so far are well maintained with good seconds Calcutta at 2½d., and first pressure French 3½d. per lb. on spot. There is a fairly good market for tallow, River Plate mutton having been done at 18s. 6d. cwt. Resin keeps firm in price, with a satisfactory demand. Spirits of turpentine are steady and moving fairly well at 24s. 9d. cwt. Petroleum quiet; American 5½d. to 7d., and Russian refined 5d. per gallon.

CAKES.—American Western linseed being in somewhat limited supply at £6. 6s. 3d. to £6. 10s. have been well inquired for. Liverpool makes command an advance, holders now quoting £7. 10s. to £8. per ton, according to brand. American decorticated cotton-seed is more in demand, but as yet the business passing continues small at £5. 12s. 6d. to £6. 5s., according to quality, whilst Liverpool makes have been in fair demand at £6. 5s. to £6. 15s. per ton. Undecorticated Liverpool makes have declined slightly, standing at £4. to £4. 10s. per ton. Egyptians continue firm owing to the short supplies on the spot, and there are no sellers under £3. 17s. 6d. per ton.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire—common £10., medium £12., best £15.; Derbyshire—common 40s., medium 50s., best 60s.; Welsh—best 90s., seconds 50s., and common 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead: £16. Red lead unchanged. Venetian red: £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide: £22. 10s. to £25.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—No great volume of business appears to be moving. The prices of both cotton and linseed oils have during the week been flat, yet the last day or two a little hardening in quotations is manifest. The importations to date, against the same time a year ago, have been: Linseed, 528,040 quarters, against 682,029 quarters; rapeseed, 68,984 quarters, against 73,166 quarters; cottonseed, 149,777 tons, against 120,463 tons; oilcake, 7,911 tons, against 10,146 tons; olive oil, 3,966 tons, against 4,934 tons; tar, 13,330 barrels, against 18,150 barrels. Linseed oil on the spot is firmer at 14s., buyers, spot, and month, 14s. 1½d., naked; forward, November-December and January-April, 14s. 7½d. Boiled and refined, £1. to £1. 10s. per ton extra. Refined cotton oil steady: spot, naked, 13s.; forward November-April, 13s. 1½d. Filtered refined, £1 to £1. 5s. per ton extra. Crude is quoted 11s. 10½d., buyers, spot; barrels £1. 10s. and ordinary casks £1. per ton extra. Castor oil unchanged. Resins are quoted ex quay here from 5s. 3d. per cwt. Spirits of turpentine, from 25s. Cod oils, from 15s. 6d. to 18s. per cwt. Oleines, from £16. 10s. to £19. for white. Olive oils unchanged. Olive oil soap (Italian), from £16. per ton. Stockholm tar, 23s. per barrel. Danish butter, 106s. to 112s. per cwt.; fine, 95s. to 102s. per cwt.; Dutch, 90s. to 100s.; Canadian, 90s. to 100s. per cwt.

CAKES.—There is now a better demand for cotton cakes, and the demand for other feed cakes is steady. Linseed cakes quoted: 95%, pure, £7. 12s. 6d. to £7. 15s. Oilcakes, £6. 12s. 6d. to £6. 15s.; Russians, this month's shipment, £7. 5s. to £7. 12s. 6d.; Americans, November delivery, £6. 15s. to £6. 17s. 6d. Cotton cakes firm: best makes, £4. 2s. 6d. to £4. 5s.; seconds, £4 to £4. 1s. 3d., spot; best makes, November-April, £4.

PAINTS.—Prices are: Mineral dry colours, £3. 10s. to £8. White and red leads unchanged. Patent dryers, 12s. per cwt. Paint remover, 25s. per cwt. Bleaching blue, 1s. per lb. Colours in water, 3d.; in turps, 4d. per lb. Black varnish, for ironwork, £5. to £5. 10s. per ton.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

A change has come over sulphate of ammonia since last writing, and the article for the time is going strong again. Within the last two days, spot business has been done at £8. 5s., and (a better sign still) forward buyers have been found up to £8. 10s. at which price selling

has been done, although some makers hold out for higher. The feeling in the general market is easier, though soda ash and soda crystals are still reported scarce. Bleaching powder is weaker, and sulphate of copper has given way in price. Caustic soda holds itself pretty firmly, and the late quotations are maintained. Chlorate of potash is easier. In mineral oils, the position regarding the burning sorts is affected a little by the slightly lowered quotations for American petroleum, but the Scotch price has not yet lost anything—at least, not in the open. Lubricating oils remain very steady, and at good values. Solid paraffins all unchanged.

Chief prices current are:—Soda crystals, £2. 12s. 6d. to £3. nett, Tyne, soda ash, 48/62°, £4. 2s. 6d. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £4. 17s. 6d. to £5. 7s. 6d. nett, Glasgow; caustic soda, white, 74° £8. 5s., 70/72° £7. 7s. 6d., 60/62° £6. 7s. 6d., cream 60/62° £6. 2s. 6d. all nett, Liverpool; bleaching powder, 35/37°, £6. 5s. nett, Tyne; saltcake, 19s.; borax, English, refined, £15., and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3½d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 3½d. less 5%, any port; nitrate of soda, 7s. 3d. to 7s. 6d.; sulphate of ammonia, £8. 5s. to £8. 6s. 3d. prompt, f.o.b. Leith; salammmoniac, first and second white, £33. and £31. nett any port; sulphate of copper, £16. 10s. less 5% Liverpool; paraffin scale, hard, 1½d. to 1½d. per lb., soft, 1½d. per lb.; paraffin wax, 120° semi-refined, 1½d. to 2d. per lb.; paraffin spirit (naphtha), 6½d. to 7d. per gallon; paraffin oil (burning), No. 1, 5½d., and crystal, 6d., at Glasgow and other big centres, for Scotch buyers (English sales a shade lower); ditto (lubricating) 86½° £4. 15s. to £5. 5s., 88½° £5. 15s. to £6. 5s., and 890/895° £6. 10s. to £7. Week's imports of sugar at Greenock were 15,300 bags beet unrefined.

TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals are in fairly good demand, and shipments are pretty heavy, as usual at this time of the year. Soda crystals £2. 12s. 6d. and £2. 15s. per ton, gross weight, locally. Caustic 70%, £7. 10s.; 76/77% £9. per ton. Sulphur scarce at £5. per ton.

Bleaching powder, softs, £6. 10s. per ton, nett; hards, £6. 15s. per ton, nett; caustic soda, 76/77% £9. and 70% £7. 10s. per ton; recovered sulphur, 2 cwt. bags, £5. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. 6d. per ton, nett; do., 52%, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95% crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham salt is steady at 9s. per ton, f.o.b. Tees.

COALS.—The demand is fairly good for early shipment. Gas coals are increasing in consumption, and are firm at 7s. 6d. to 8s. per ton. Coke is very steady for best qualities. Best Northumbrian steam, 8s. 6d. to 9s. per ton; second qualities, 7s. 6d. to 7s. 9d. per ton; small steam, 3s. 9d. to 4s. per ton; gas coals 7s. 6d. to 8s. per ton; household coals, 10s. to 11s. per ton; coke, steady, 18s. to 21s. per ton.

New Companies.

Bond's Soap Co., Ltd.—CAPITAL £15,000., in £1. shares, to acquire the business of Bond's Soap Co., Ltd., to enter into certain agreements, and to carry on the business of metal, toilet, and other soap manufacturers, soap boilers, tallow chandlers, oil refiners, etc. The subscribers to the memorandum of association are:—C. R. Hemingway, 1, Brunel-terrace, Nottingham, contractor; A. M. Ross, 19, Coates-crescent, Edinburgh, contractor; W. Sealing, 41, Great Clowes-street, Lower Broughton, Manchester, manufacturer; F. Collins, Claremont, Sherwood Rise, Nottingham, manager; R. A. Wilde, Fernhurst, Gregory Boulevard, Nottingham, cashier; G. H. Hughes, Lancaster-road, Birkdale, gentleman; H. A. Farnell, 28, Brazenose-street, Manchester, clerk.

Kempson and Co., Ltd.—CAPITAL £25,000., in £10. shares, to acquire the business of Kempson and Co., of Pye Bridge, Alfreton, to

adopt an agreement with J. F. Kempson, and to carry on the business of chemical manufacturers. The subscribers to the memorandum of association are:—J. F. Kempson, Crow Lees, Leicester, chemical manufacturer; Mrs. E. L. Kempson, Crow Lees, Stoneygate, Leicester; Mrs. E. Kempson, Southfields, Leicester; C. Kempson, Horse-fair-street, Leicester, architect; J. Diamond, Pye Bridge, chemical manufacturer; W. Diamond, Pye Bridge, chemist; W. Elliott, Blackwell, Alfreton, colliery manager.

Kent Collieries Corporation, Ltd.—CAPITAL £1,500,000., in £1. shares, to search for coal in Kent or elsewhere, to adopt an undescribed agreement, and to carry on the business of colliery proprietors, coke manufacturers, coal merchants iron masters, brick makers, etc. The subscribers to the memorandum of association are:—Sir O. R. Stacke, C.B., Fane Valley, Dundalk, Ireland; E. C. R. Roose, M.D., 45, Hill-street, Berkeley-square, London, W.; H. E. R. Roose, 3, Draper's Gardens, London, E.C., stockbroker; H. W. Marley, Morton House, E. Molesey, surveyor; J. B. Martin, Victoria Mansions, London, S.W., landowner; J. F. Williams, 27, Leadenhall-street, London, E.C., merchant; F. Pitts, 78, Lombard-street, London, E.C., stockbroker. Registered office, 18, Queen Victoria-street, London, E.C.

Mawddach Gold Extraction Syndicate, Ltd.—CAPITAL £20,000., in £1. shares, to adopt an agreement with C. P. Shrewsbury, J

Cooper, and F. L. Marshall, and to carry on the business of extractors of gold from auriferous substances. The subscribers to the memorandum of association are:—R. R. Royds, 61, Merton-road, Wimbledon, gentleman; S. S. Titt, Queen's Hotel, Brighton, hotel keeper; J. Cooper, 50, Queen Anne's Gate, London, S.W., gentleman; C. P. Shrewsbury, 3, Abbott's-road, London, N.W., engineer; H. R. Gregory, 7, Quality-court, Chancery-lane, London, W.C., chemist; O. March, 53, Victoria-street, London, S.W., engineer.

Thomas Whitfield and Co., Ltd.—CAPITAL £7,000., in £10. shares, to acquire the business carried on by T. Whitfield, at the Gaunless Manure Works, Bishop Auckland, co. Durham, and to carry on the business of manure manufacturers, glue manufacturers, bone crushers, and grinders, manufacturing chemists, etc. The subscribers to the memorandum of association are:—W. H. Aykroyd, West View, Manningham, Bradford, dyer; Mrs. E. L. Aykroyd, West View, Manningham, Bradford; S. W. Scadding, Bishop Auckland, manufacturing chemist; Mrs. S. W. Scadding, Bishop Auckland; H. E. Aykroyd, Upper Carr Mills, Liversedge, Yorkshire, spinner; A. C. Aykroyd, Dartrey Park-road, Rathgar, Dublin, merchant; Mrs. A. C. Aykroyd, Dartrey Park-road, Rathgar, Dublin. Registered office, Gaunless Manure Works, Bishop Auckland, co. Durham.

IMPORTS OF CHEMICAL PRODUCTS

AT

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending October 16th.

Acetanilide — Holland, 10 cks. A. & M. Zimmermann	Holland, 16 Germany, 120 France, 174 Holland, 35 Germany, 25 Belgium, 5 Holland, 26 " 34	Phillipps & Graves L. & I. D. Jt. Co. A. & M. Zimmermann Mory & Co. G. Rahn & Co. H. Lambert T. Ronaldson & Co. T. H. Lee H. Lorenz
Acetate of Lime — U. States, 264 bgs. H. Wallace & Co. 752 J. R. Francis & Co.		
Acetic Acid — Holland, 70 pks. A. & M. Zimmermann 73 cks. R. W. Greiff & Co. 100 pks. T. H. Lee Germany, 100 pks.		
Acetone — Germany, 8 drs. J. M. Steel & Co. 11 Matthews & Luff Austria, 15 Thames S. T. & L. Co., Ltd. France, 13 T. W. Elliott Holland, 1 tin R. W. Greiff & Co.		
Alkali — Canada, 200 c. J. Barber & Co. Belgium, 400 C. Lamb & Co.		
Alum — Germany, 10 cks. T. H. Lee Holland, 210 pks. Ohlenschlager Bros.		
Aniline Salts — Holland, 40 cks. J. W. Cook & Co.		
Asphaltum — B. W. L., 27 brls. J. D. Hewett & Co.		
Barium Chloride — Germany, 32 cks. Petri Bros.		
Barytes — Holland, 42 cks. E. J. Diggins Germany, 20 H. Lambert Holland, 112 W. Harrison & Co.		
Bleaching Powder — Holland, 20 cks. J. M. Steel & Co.		
Camphor — Germany, 2 pks. 1 ck. L. & I. D. Jt. Co. Belgium, 3 John Cockerill Line		
Caoutchouc — France, 7 c. Hernu, Peron & Co. Natal, 19 Hale & Son Zanzibar, 7 Ceylon, 3 Hoare, Wilson & Co. Aden, 15 S. Figgis & Co. Ceylon, 4 Colombo Com. Co. Germany, 80 Prop. Bull Wf.		
Castor Oil — France, 10 brls. J. Greig " 20 cs. F. Boehm " 56 Mordaunt Bros.		
Caustic Soda — Sydney, 33 c. L. & I. D. Jt. Co.		
Chemicals (otherwise undescribed) Germany, 263 Phillipps & Graves Belgium, 252 T. Palmer Spain, 5 Burgoyne & Co. Holland, 20 J. Owen " 20 F. Boehm		

Tanners' Bark

Natal, 10 t. Boucher, Mortimore & Co.	
" 7 Bullard, King & Co.	
" 43 Flack, Chandler & Co.	
Belgium, 40 Leach & Co.	
" 50 H. K. Daniels	
Valonia A. Turkey, 10 t. F. Claydon & Co.	
Farina — Germany, 84 bgs. Hernu, Peron & Co.	
Glucose — U. States, 50 pks. 300 c. T. J. Lipton " 10,500 10,500 Pearce, Pelly & Co.	
" 800 1,700 R. G. Hall & Co.	
France, 200 200 Barrett, Tagant & Co.	
U. States, 50 300 Page, Son & East	
" 249 1,494 Deering & Robottom	
France, 400 400 W. E. Cole	
Germany, 100 305 R. G. Hall & Co.	
U. States, 1,505 1,505 E. Thompson & Co.	
" 50 300 C Southwell & Co.	
" 400 1,437 Williams, Torrey & Co.	

Glue

Austria, £50 J. Kitchen	
" 150 M. D. Co.	
Holland, 98 F. Claydon & Co.	
Germany, 31 T. H. Lee	
U. States, 47 L. & I. D. Jt. Co.	
Germany, 34 M. D. Co.	
" 10 Phillipps & Graves	
Belgium, 60 T. H. Lee	
Austria, 320 J. Greig	
France, 660 Morison & Co.	
" 160 W. E. Cole	
Belgium, 560 J. Barber & Co.	
France, 96 T. M. Duche & Sons	

Infusorial Earth

Holland, £25 Taylor Bros.	
Germany, 1,773 bgs. A. Haacke & Co.	

Lamp Black

U. States, 80 bds. J. Melvin	
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Litharge

Holland, 6 cks. J. Barber & Co.	
Germany, 16 brls. G. Smith & Son	

Magnesia

Holland, 5 cs. A. & M. Zimmermann	
Belgium, 400 bgs. W. G. Stewart	

Manure

Germany, 20 t. D. de Pass & Co.	
Belgium, 50 J. G. Back	
E. Indies, 550 A. Hunter & Co.	

Methyl Alcohol

Holland, 13 dms. F. W. Elliot	
Austria, 15 cks. Tingle, Jacob, & Co.	

U. States, 50 brls. Beck & Pollitree	
Spain, 2 dms. Lister & Biggs	

Mica

E. Indies, £440 S. Figgis & Co.	
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Molasses

U. States, 155 pks. 880 c. R. G. Hall & Co.	
" 250 1,200 J. W. Cook & Co., Ltd.	
" bulk 40,000 J. R. Francis & Co.	

Ochre

Germany, 8 cks. H. Keller & Co.	
Holland, 18 pks. Phillipps & Graves	

Phosphate Rock

Belgium, 300 t. West & Penrose	
France, 300 J. Harrison	
" 500 W. E. Cole	
Belgium, 195 Odams Manure & Chemical Co.	
" 55 Chemical Works Co.	

Pitch

France, 172 brls. Poth, Hille, & Co.	
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Plumbago

Germany, 16 cks. G. Mayor & Co.	
" 9 A. C. Lloyd	
Ceylon, 86 J. Threlkeld, Son, & Co.	
Germany, 20 cs. T. H. Lee	
" 61 cks. B. Gallaway	
Ceylon, 44 G. R. Hill	
Germany, 52 Beck & Pollitree	

Potash

Canada, 57 c. S. Ward & Co.	
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Potassium Bicarbonate

Holland, 3 cks. A. & M. Zimmermann	
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Potassium Carbonate

Belgium, 100 c. Beresford & Co.	
France, 200 Petri Bros.	
Germany, 40	
" 425 Gas Light & Coke Co.	
" 103 A. & M. Zimmermann	

Potassium Chloride

Germany, 504 bgs. Bessler, Waechter & Co.	
Holland, 15 cks. H. Johnson & Son	

Potassium Oxymuriate

Sweden, 40 kgs. G. Boor & Co.	
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Potassium Permanganate

Holland, 7 cks. R. W. Greiff & Co.	
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Potassium Sulphate

Germany, 503 bgs. Bessler, Waechter & Co.	
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Pumice Stone

Italy, 6 t. Wilkinson, Heywood & Co.	
Holland, 1 T. Cartwright	
Italy, 5 Stobbs, Williams & Co.	
" 15 Z. Cartwright, Ltd.	
" 2 Tudors, Mash, & Co.	
" 3 Stobbs, Wilson, & Co.	

Pyrites — Spain, 2,072 t. C. Tennant, Sons, & Co.		Aluminium — New York, 500 bxs. T. Ashbury		Pumice Stone — Leghorn, 18 brls. 2 cs. G. Robert-son		Boulogne, 15 cks. 1 cs. Rotterdam, 13 10	
Saltpetre — Belgium, 85 bgs. J. Greig Germany, 7 cks. L. & I. D. Jt. Co.		Barytes — Rotterdam, 180 cks. Amsterdam, 15 Antwerp, 54 60 bgs.		Rosin — Savannah, 4,011 brls.		Cottonseed Oil — Rotterdam, 75 tcs.	
Soda — Belgium, 106 c. J. Harrison		Borate — New York, 2,166 sks. Leine Pacific Borax & Redwood Chem. Co.		Saltpetre — Hamburg, 1 ck. 175 kgs. Sandy Point, 515 sks. Duncan, Fox & Co.		Cream of Tartar — Rotterdam, 6 cks.	
Sodium Hypsulphite — Germany, 115 cks. Petri Brs.		Borax — Mollendo, 801 sks.		Karachi , 117 bgs. Antwerp , 102 brls.		Farina — Hamburg, 500 bgs.	
Sodium Prussiate — Belgium, 16 brls. Blagden, Waugh, & Co.		Caoutchouc — Mollendo, 10 pks. Kleinwort, Sons & Co.		Soap — Marseilles, 50 bxs. M'Dowell, Atkin & Co. " 75 Hudson Bay Co. " 100 T. Earle " 100 158 cs.		Glue — Rouen, 10 cks. 77 cs. 10 bls. Rotterdam, 230 bgs. Trepport, 7 cks.	
Starch — Holland, 180 cs. E. Olyett & Sons " 1,952 Little & Johnston Germany, 250 Home & Co. " 220 Seaward Brs Belgium, 40 Leach & Co. " 391 F. Claydon & Co. " 180 C. Tennant, Sons, & Co. " 100 Taylor Brs. " 210 Becker & Wagner " 30 pks. Union L. Co. " 230 cs. T. H. Lee " 900 E. & T. Pink France, 570 Holland, 20 Philipps & Graves " 400 Fellows, Morton, & Co. U. States, 60 brls. Beck & Pollitzer		Castor Oil — Calcutta, 953 cs. Ralli Brs. " 200		Sodium Nitrate — Sandy Point, 2,346 bgs. J. Hoare & Co.		Lead Acetate — Hamburg, 8 cks.	
Stearine — Holland, 317 bgs. Palmer & Co. Belgium, 63 W. H. Mitchell " 125 H. Hill & Sons " 10 cks.		Caustic Potash — Dunkirk, 4 cks. 105 dms.		Starch — Hamburg, 76 cs. New York, 100 bgs. Amsterdam, 20 bxs. Antwerp, 213 cs. J. T. Fletcher & Co. " 623		Limestone — Antwerp, 1 crite. J. T. Fletcher & Co. " 2 cs.	
Talc — E. Indies, 2,240 W. M. Smith & Sons		China Clay — Trieste, 2 cks.		Stearine — Antwerp, 38 bgs. J. T. Fletcher " 13		Mineral White — Bordeaux, 100 bgs. J. & P. Hutchison	
Tartar — Italy, 4 pks. W. C. Bacon & Co.		Citric Acid — Messina, 43 cks. Bordeaux, 2		Sulphur — Catania, 184 brls. 1,100 bgs. & qty.		Ochre — Bordeaux, 4 cks. J. & P. Hutchison	
Tartaric Acid — Holland, 13 pks. Kirkpatrick & Co. " 4 B. & F. Wf. Co. " 12 cks. " 6 F. C. Devon & Co. Italy, 20 pks. B. & F. Wf. Co.		Cod Oil — Hamburg, 5 brls.		Tallow — New York, 150 tcs.		Oxalic Acid — Rouen, 5 cks.	
Ultramarine — Holland, 7 cs. Hernu, Peron, & Co. " 4 cks. J. Barber & Co. Germany, 16 cs. H. Brooks & Co. " 61 pks. Steinhoff, Sens, & Co. Holland, 8 cks. G. Rahn & Co.		Colours — Antwerp, 4 brls. J. T. Fletcher & Co.		Tartar — Bordeaux, 1 ck. Marseilles, 2		Phosphates — Rotterdam, 12 cks.	
Yarnish — U. States, 12 pks. Dawson Brs. Belgium, 2 W. Gerson & Co. U. States, 20 Williams, Torrey, & Co.		Cottonseed Oil — New York, 420 brls.		Tartaric Acid — Messina, 12 cks. Rotterdam, 3		Pitch — Rotterdam, 13 cks.	
Verdigris — France, 2 cks. B. & F. Wf. Co.		Cream of Tartar — Bordeaux, 20 cks. Oporto, 5		Treacle — New York, 300 brls. Philadelphia, 500		Potassium Chlorate — Gothenburg, 10 cks. 90 kgs	
White Lead — Germany, 25 cks. Burrell & Co. " 35 F. G. Clifford " 23 H. B. Alder & Co. Norway, 17 Locke, Lancaster, & Co. Germany, 37 D. Storer & Sons Belgium, 46 Burrell & Co. " 38 brls. T. & W. Farmiloe, Ltd.		Dyestuffs — Argols Oporto, 52 cks. Cochineal Gd. Canary, 6 bgs. Burrell & Co. Sperling & Co. " Cutch Rotterdam, 103 bgs. Diyl Diyl Hamburg, 300 bgs. Gambier Singapore, 3,064 bls. Myrabolams Bombay, 1,649 bgs. Saffron Valencia, 4 cs. Shumac Palermo, 2,105 bgs. 100 bls. Valonia Smyrna, 2,847 ktls. G. Essayan & Co.		Ultramarine — Rotterdam, 20 cks. 1 cs. Antwerp, 10 4		Potassium Chloride — Hamburg, 5 cks.	
Wood Pulp — Germany, 427 bls. Tough & Henderson Sweden, 1,653 J. Sharp " 200 pks. H. Raby & Mather " 180 Christophersen, Andrews, & Co. Canada, 2,688 Becker & Co. Germany, 26 F. V. Smythe & Co. U. States, 173 Williams, Torrey & Co. Sweden, 800 Henderson, Craig, & Co. Belgium, 1,834 E. J. & W. Goldsmith Sweden, 272 C. S. Lovell		Farina — Fiume, 104 bgs. Maranham, 10 pks.		Verdigris — Bordeaux, 1 ck. Hamburg, 50 t. 152 bgs.		Potassium Sulphate — Rotterdam, 50 cks.	
Zinc Oxide — Belgium, 2 cks. J. Harrison Holland, 23 J. Matton " 50 Burrell & Co. " 500 Soundy & Sons Germany, 170 M. Ashby, Ltd. U. States, 150 brls.		Ferrochrome — Bordeaux, 7 cks. 1 cs.		Wood Pulp — Montreal, 320 rolls. Thin & Sinclair Rotterdam, 150 bls.		Rosin — Bordeaux, 17 cks. J. & P. Hutchison	
LIVERPOOL. Week ending October 14th.		Gelatine — Marseilles, 12 cs.		Zinc Ashes — Bordeaux, 156 pks. R. J. Francis & Co.		Shumac — Bordeaux, 8 bls. J. & P. Hutchison	
Acetate of Lime — New York, 847 bgs.		Glue — Rouen, 4 cks. R. J. Francis & Co. St. Nazaire, 20 Rouen, 9 Co-op. W'sale Society, Ltd. Rotterdam, 3 cs. 110 bgs. 1 ck.		Zinc Oxide — New York, 210 brls. Marseilles, 60 cks. Antwerp, 35 brls.		Sodium Acetate — Trepport, 30 cks.	
Albumen — Marseilles, 5 cs.		Paint — Constantinople, 18 dms.		Zinc White — Hamburg, 40 cks. Rotterdam, 70		Sodium Nitrate — Rotterdam, 8 cks.	
		Paraffin Scale — New York, 291 brls. Thompson & Bedford		MANCHESTER Week ending October 16th.		Sodium Prussiate — Antwerp, 16 brls.	
		Baltimore , 100 Philadelphia , 52		Alizarine — Rotterdam, 68 cks.		Starch — Antwerp, 160 cs. J. T. Fletcher & Co. Rotterdam, 78	
		Phosphates — Ghent, qty. Antwerp, 5,000 bgs.		Alumina Sulphate — Rotterdam, 16 cks.		Tallow — Hamburg, 100 tcs.	
		Pitch — Hamburg, 26 cks. Marseilles, 50		Aniline Colours — Rotterdam, { 21 cks. 17 brls. " 15 cs.		Tannic Acid — Hamburg, 2 cts.	
		Potash — Rouen, 100 cks. Co-op. W'sale Society, Ltd.		Annatto — Bordeaux, 22 cks. J. & P. Hutchison		Tartar — Bordeaux, 1 ck. J. & P. Hutchison	
				Anthracene — Rotterdam, 25 cks.		Tartaric Acid — Rotterdam, 1 ck.	
				Barytes — Rotterdam, { 22 cks. " 200 bgs. Antwerp, 50		Tin Oxalate — Rotterdam, 12 cks.	
				Bone Ash — Rio Grande Sul, 588 t.		Ultramarine — Rotterdam, 3 cks.	
				Chemicals (otherwise undescribed) Rouen, 65 cks.		Waste Salt — Hamburg, 480 cks.	
				Colours — Antwerp, 7 cks. J. T. Fletcher & Co.		Wood Pulp — Gothenburg, 2,970 bls. Rotterdam, 123 Sarpsborg, 3,855 Kellner Partington P. & P. Co.	

HULL.

Week ending October 16th

Acids — Rotterdam, 1 bx. W. & C. L. Ringrose Ghent, 1 ck. Sons, & Co., Ltd.	
Albumen — Riga, 2 cs.	
Arachide Oil — Rotterdam, 1 ck. Hutchinson & Son	
Asphaltum — Bremen, 570 pks.	
Barytes — Rotterdam, 33 cks. Hutchinson & Son " 50 bgs.	

Antwerp,	35 cks.	Bailey & Leatham, Ld.
Hamburg,	100 bgs.	"
Bremen,	2 cks.	"
Rotterdam,	22	"
Caoutchouc —	1 pk.	W. & C. L. Ringrose
Chemicals (otherwise undescribed)		
Dunkirk,	24 cks.	Wilson, Sons, & Co., Ld.
Hamburg,	9 pks.	"
Rotterdam,	3 cks.	"
New York,	115 pks.	W. & C. L. Ringrose
Antwerp,	10 brls.	Bailey & Leatham, Ld.
"	7 cks.	Sons, & Co., Ld.
Hamburg,	12	Wilson, Sons, & Co., Ld.
"	10	"
Hamburg,	5 cs.	Sons, & Co., Ld.
Cottonseed Oil —		
New York,	270 brls.	Wilson, Sons, & Co., Ld.
Cream of Tartar —		
Rotterdam,	4 cks.	Hutchinson & Son
Cryolite —		
Copenhagen,	6 cks.	Wilson, Sons, & Co., Ld.
Dyestuffs —		
Alizarine		
Rotterdam,	31 cks.	W. & C. L. Ringrose
Bordeaux,	20 brls.	"
"	50 bgs.	Rawson & Robinson
"	51 cks.	Wilson, Sons, & Co., Ld.
Farina —		
Stettin,	48 bgs.	Wilson, Sons, & Co., Ld.
Harlingen,	20	W. & C. L. Ringrose
Hamburg,	20 bls.	Wilson, Sons, & Co., Ld.
Glucose —		
Rotterdam,	50 bgs.	Hutchinson & Son
Glue —		
Stettin,	8 bkts.	Wilson, Sons, & Co., Ld.
Antwerp,	5 cks.	Bailey & Leatham, Ld.
Rouen,	33 brls.	Rawson & Robinson
Dunkirk,	10 cks.	Wilson, Sons, & Co., Ld.
Rotterdam,	2	W. & C. L. Ringrose
Lamp Black —		
New York,	50 brls.	"
Lead Acetate —		
Hamburg,	30 cks.	Bailey & Leatham, Ld.
Phosphate —		
Dunkirk,	2,800 bgs.	"
Pitch —		
Hamburg,	39 brls.	"
Potash —		
Dunkirk,	19 cks.	Wilson, Sons, & Co., Ld.
Quicksilver —		
Hamburg,	5 brls.	Wilson, Sons, & Co., Ld.
Saltpetre —		
Hamburg,	24 cks.	Wilson, Sons, & Co., Ld.
"	12 bgs.	"
Antwerp,	135	"
Soap —		
Hamburg,	2 cs.	Wilson, Sons, & Co., Ld.
St. Petersburg,	2	"
Soda —		
Antwerp,	222 pks.	Bailey & Leatham, Ld.
"	100 bgs.	Wilson, Sons, & Co., Ld.
Starch —		
Antwerp,	190 cs.	Bailey & Leatham, Ld.
Bremen,	87 pks.	Veltmann & Co.
Amsterdam,	80 cs.	W. & C. L. Ringrose
Dunkirk,	10 bgs.	Wilson, Sons, & Co., Ld.
Tallow —		
Dunkirk,	141 cks.	Wilson, Sons, & Co., Ld.

Tar Salts —		
Hamburg,	5 cks.	Wilson, Sons, & Co., Ld.
Tartar —		
Bordeaux,	15 cks.	Rawson & Robinson
Tartaric Acid —		
Rotterdam,	7 cks.	Hutchinson & Son
Treacle —		
New York,	2,260 brls.	Wilson, Sons, & Co., Ld.
Hamburg,	4 cks.	Bailey & Leatham, Ld.
Ultramarine —		
Rotterdam,	7 pks.	W. & C. L. Ringrose
Waste Salt —		
Hamburg,	qty.	Bailey & Leatham, Ld.
White Lead —		
Ghent,	16 brls.	Wilson, Sons, & Co., Ld.
Dunkirk,	16 cks.	"
Wood Pulp —		
Hamburg,	80 bls.	Wilson, Sons, & Co., Ld.
Gothenburg,	858	"
Christiania,	840	"
Helsingfors,	332	J. Good & Sons
Zinc Ashes —		
Gothenburg,	15 brls.	Wilson, Sons, & Co., Ld.
Zinc Oxide —		
Antwerp,	125 cks.	Bailey & Leatham, Ld.
Rotterdam,	10	Hutchinson & Son

GLASGOW.

Week ending October 21st.

Acetic Acid —		
Rotterdam,	15 cks.	"
Arachide Oil —		
Rotterdam,	4 cks.	"
Barium Sulphate —		
Antwerp,	800 bgs.	"
Barytes —		
Rotterdam,	11 cks.	J. Rankine & Son
"	66	"
Castor Oil —		
Trieste,	10 cs.	Robertson & M'Intosh
Antwerp,	56 cks.	"
Chemicals (otherwise undescribed)		
Hamburg,	52 cks.	"
Rotterdam,	50 cs.	J. Rankine & Son
Chrome Alum —		
Rotterdam,	6 brls.	"
Colours —		
Hamburg,	19 cks.	9 cs.
Rotterdam,	131 pks.	J. Rankine & Son
Dyestuffs —		
Alizarine		
Rotterdam,	62 brls.	"
Aniline		
Rotterdam,	20 cks. 17 bxs. 59 brls. 1 cs.	"
Extracts		
Ghent,	3 cks.	"
Antwerp,	1	"
Indigo		
Rotterdam,	1 brl.	"
Farina —		
Delfsryhl,	1,410 bgs.	J. Rankine & Son
French Chalk —		
Trieste,	50 bgs.	Robertson & M'Intosh
Glue —		
Fiume,	100 bgs.	"
Antwerp,	2 cks. 10 bls.	"
Hamburg,	150 bgs.	"
Lead Acetate —		
Hamburg,	40 cks.	"
Magnesite —		
Fiume,	443 bgs.	"
Manganese Chloride —		
Rotterdam,	6 cks.	"
Oxalic Acid —		
Hamburg,	6 cks.	"
Paint —		
Montreal,	97 pks.	"
Amsterdam,	6 dms.	J. Rankine & Son

Phosphate of Lime and Rock —		
Ghent,	1,000 bgs.	"
Pitch —		
Antwerp,	2 cks.	"
Potash —		
Rotterdam,	20 cks.	J. Rankine & Son
Hamburg,	4	"
Pyrites —		
Huelva,	1,694 t.	Tharsis Co.
Rosin —		
Rotterdam,	6 cks.	J. Rankine & Son
New York,	750 brls.	"
Saltpetre —		
Hamburg,	3 cks. 40 kgs. 1 brl.	"
Soap —		
Trieste,	42 cs.	"
New York,	50 bxs.	"
Soda —		
Antwerp,	10 cks.	"
Soda Ash —		
Rotterdam,	400 bgs.	J. Rankine & Son
Sodium Sulphate —		
Rotterdam,	1 brl.	"
Starch —		
Antwerp,	170 cs.	"
Ghent,	40 cs.	"
Stearine —		
Amsterdam,	122 bgs.	J. Rankine & Son
Sulphur —		
Catania,	51 brls.	"
Tartar —		
Bordeaux,	37 cks.	"
Treacle —		
Philadelphia,	750 brls.	Waddall & Bryson
New York,	100	"
Ultramarine —		
Rotterdam,	10 cs.	J. Rankine & Son
"	6 cks.	"
Varnish —		
Antwerp,	2 cks.	"
New York,	20 brls.	"
Waste Salt —		
Hamburg,	250 cks.	"
White Lead —		
Rotterdam,	9 pks.	J. Rankine & Son
"	40 cks.	"
Wood Pulp —		
Christiania,	1,620 bls. 24 cs.	"
Hamburg,	43 rolls	"
Zinc Oxide —		
Rotterdam,	25 cks.	"
New York,	100 brls.	"
Zinc White —		
Rotterdam,	50 cks.	"

TYNE.

Week ending October 16th.

Alum Earth —		
Hamburg,	45 cks.	Tyne S. S. Co.
Barytes —		
Amsterdam,	46 cks.	Wm. Swanston & Sons
Rotterdam,	268 bgs. 101 cks. 350 bgs. 52 cks.	Tyne S. S. Co.
Antwerp,	52 cks.	"
Castor Oil —		
Antwerp,	28 brls.	Tyne S. S. Co.
Cod Oil —		
Bergen,	6 brls.	"
Colours —		
Ghent,	2 brls.	Tyne S. S. Co.
Antwerp,	2 cks.	"
Glue —		
Rotterdam,	10 bgs.	Tyne S. S. Co.
Hamburg,	7 cks.	"
Limestone —		
Antwerp,	7 crts.	Tyne S. S. Co.
Paint —		
Hamburg,	34 dms.	Tyne S. S. Co.
"	5 cs.	"
Pyrites —		
Rotterdam,	1,510 t.	Tharsis Sulphur & Copper Co.
Soap —		
Rotterdam,	6 cs.	Tyne S. S. Co.

Starch —		
Rotterdam,	100 cs.	Tyne S. S.
Antwerp,	100	"
Stearine —		
Antwerp,	14 bgs.	Tyne S. S.
Waste Salt —		
Hamburg,	271 t.	"
Wood Pulp —		
Christiania,	370 bls.	"
Rotterdam,	130	Tyne S. S.
Zinc Oxide —		
Antwerp,	15 brls.	Tyne S. S.

GOOLE.

Week ending October 23rd.

Alizarine —		
Rotterdam,	65 cks. 3 cs.	"
Alkali —		
Calais,	1 ck.	"
Antimony —		
Boulogne,	5 cks.	"
Antimony Oxide —		
Hamburg,	2 kgs.	"
Caoutchouc —		
Boulogne,	10 cks. 1 cs.	"
Carborate of Lime —		
Antwerp,	130 bgs.	"
Colours —		
Hamburg,	2 cs.	"
Ghent,	1	"
Dyestuffs (otherwise undescribed)		
Amsterdam,	1 ck.	"
Boulogne,	34	2 cs. 32 pks
Rotterdam,	466	111
Farina —		
Hamburg,	550 bgs.	"
Antwerp,	10	"
Glue —		
Hamburg,	25 bgs.	"
Rotterdam,	40	"
Boulogne,	1 ck.	"
Ochre —		
Calais,	22 cks.	"
Potash —		
Hamburg,	5 cks.	"
Calais,		6 dms
Pyrites —		
Huelva,	2,750 t.	"
Saltpetre —		
Hamburg,	1 ck.	"
Rotterdam,	100 bgs.	"
Starch —		
Antwerp,	299 cs.	"
Tar Salts —		
Hamburg,	4 cks.	"
Tartaric Acid —		
Rotterdam,	2 cks.	"
Varnish —		
Boulogne,	1 cs.	"
Waste Salt —		
Hamburg,	437 cks. 100 t.	"
Wood Pulp —		
Rotterdam,	62 bls.	"

GRIMSBY.

Week ending October 16th.

Caoutchouc —		
Hamburg,	8 cs.	"
Antwerp,	1 ble.	"
Chemicals (otherwise undescribed)		
Rotterdam,	10 cks.	"
Hamburg,	5	1 cs.
Colours —		
Antwerp,	21 cks.	7 pks
Hamburg,	7	24 cs.
Rotterdam,	3	1
Dyestuffs (otherwise undescribed)		
Dieppe,	25 cks.	"
Farina —		
Hamburg,	50 bgs.	"
Glue —		
Dieppe,	13 cks.	"
Lamp Black —		
Malmo,	30 cks.	"
Plumbago —		
Hamburg,	1 ck.	"
Wood Pulp —		
Kragero,	606 t.	"
Zinc Ashes —		
Antwerp,	5 cks.	"

Chemicals (otherwise under.)—

Alexandria,	1 t.	4 c.	£37
Naples,		5	7
Montreal,	30	10	1 q. 148
Calcutta,	1	10	49
Salonica,	1	1	35
Philadelphia,	13	14	412
Valparaiso,		1	21

China Clay—

Bombay,	80 cks.		
Boston,	1,200		
Calcutta,	405		
Montreal,	520		
Odessa,	99		
Rio de Janeiro,	80		

Citric Acid—

Vera Cruz,	4 c.	£13	
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Coal Products—**Aniline Colours—**

Barcelona,	3 cks.	2 cs.	
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Aniline Salts—

Boston,	37 cks.	42 cs.	1 kg.
New York,		20	

Creosote

Bordeaux,	250 cks.		
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Pitch

Rouen,	104 t.		
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Tar

Galatz,	20 brls.		
Hamburg,	122		
Pernambuco,	20		
Philadelphia,	250		
Sulina,	150		

Copper Sulphate—

Libau,	1 t.	3 q.	£16
Calamata,		5 c.	21
Genoa,	14	17	211
Patras,	14	19	231
Melbourne,	12	10	199
Galatz,		10	7
Rouen,	5	11	92
Paris,	5	7	87
Boston,	2	10	2
Mersyne,	1	4	20
Calcutta,	10		156
Leghorn,	26	15	1
Catania,	5		76
Bordeaux,	29	17	3
Rouen,	4	19	3
Syra,	1	13	1
Montreal,			15

Copperas—

Montreal,	1 t.	17 c.	1 q. £4
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Cyanide—

Rio de Janeiro,	2 c.	£9	
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Disinfectants—

New York,	9 t.	10 c.	2 q. £125
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Magnesia—

New York,	1 ck.		
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Magnesium Chloride—

Rouen,	5 t.	3 c.	2 q. £12
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Magnesium Sulphate—

Rio de Janeiro,	180 kgs.		
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Manure—

Gd. Canary,	10 t.		£84
Bordeaux,	52	2 c.	288

Oxalic Acid—

Victoria, B.C.,	6 c.	3 q.	£12
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Paint—

Alexandria,	52 pks.		
Algoa Bay,	1 brl.		
Antwerp,	13 kgs.	10 pks.	2 cks.
Arecibo,			
Belize,	105		
Boston,	14		6
Cape Haitien,			13
Colon,	18	14 dms.	2
Dunkirk,			
Ferrol,	100		
Gibraltar,	68		
Guayaquil,		8 cs.	2
Havana,			
Iquique,	15	16 bks.	11 dms.
Lagos,		2 cs.	12 dms.
Loando,			
Madras,	50		
Manaos,	1		9
Maracaibo,		qty.	
M. Video,			
Mossel Bay,			3
New York,	30		3
Pernambuco,	110		
St. Thomas,	128		
Sierra Leone,	40		12
Trieste,			

Painters' Colours—

Bahia,	14 cs.		
Bremen,	100 bgs.		
Corfu,	1 bx.	1	
Dunkirk,	17 cks.		
Ferrol,			3 brls.
Hamburg,	32 kgs.	2	

Iquique,	8 t.	1	
Madras,	8 t.	1	

Paraffin Wax—

Callao,	101 bgs.		
Constantinople,		60 cs.	
Lisbon,	100		20
Singapore,		10 cks.	

Phosphorus—

Trinidad,	3 c.	£30	
Shanghai,	6 t.	8	1,370

Potash Salts—

N. Orleans,	18 t.	7 c.	1 q. £1500
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Potashes—

Genoa,	14 c.	1 q.	£12
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Potassium Bichromate—

Piræus,	1 t.	10 c.	£84
Lyttelton,		2 q.	198
Montreal,	4	19	

Potassium Carbonate—

Yokohama,	15 c.	£49	
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Potassium Chlorate—

Genoa,	10 c.	£15	
Gutjewsky,	11 t.	354	
New York,		30	
Sao Paulo,	1	10	45
Vera Cruz,	2		80
Hamburg,	3	4	99
Gothenburg,	15	13	797
Rio de Janeiro,	1	15	58
Hioho,	10		313
Rotterdam,	2	15	97
Shanghai,	8	10	270
Stockholm,	6		190

Potassium Cyanide—

New York,	5 t.	£480	
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Potassium Prussiate—

Genoa,	8 cks.	£91	
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Potassium Silicate—

B. Ayres,	9 c.	3 q.	£4
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Salt—

Algoa Bay,	8 t.	18 c.	
Amsterdam,	110		
Antwerp,	140		
Bahia,	1		
Baltimore,	30		2,000 sks.
Boston,	100		
B. Ayres,	64	18	
Calcutta,	5,701		
Christiania,			110
Conakry,	748 bgs.		
Dakar,	1,000		2,000
Dunedin,			
Ghent,	184 t.		
Halifax,	200		
Hamburg,	531 bds.		
Iquitos,	900 bgs.		
Lagos,	2,489		
Montreal,	19 tcs.	13,215	
Newcastle,	241 t.		1,500
N. Orleans,			1,000
Newport News,			1,500
New York,	260		
Old Calabar,	140	3 c.	
Opobo,	25		
Para,	200		
Pt. Natal,	100		
Rangoon,	646		
Rio de Janeiro,		150 cs.	
Rotterdam,	150		
St. John's, Nfld.,	10		
Sierra Leone,	150		
Talcahuano,	250		
Valparaiso,	250		
Wellington,	85		

Salt Cake—

Philadelphia,	100 t.	13 c.	£149
Acajutla,	2	2	5

Saltpetre—

Toronto,	5 c.	£5	
Maranham,	15	3 q.	17
Vancouver,	50 t.		1,100
Ceara,	19	3	22
Pernambuco,	1	8	2

Sheep Dip—

Montreal,	2 t.	5 c.	£50
Pt. Natal,	15		1
B. Ayres,	17	100 cs.	3 q. 65 3

Soap—

Accra,	200 bxs.		
Akassa,	166		
Alexandria,	37		
Algoa Bay,	1,425	50 cs.	
Amsterdam,	110	150	
Antwerp,	2,915		50 bds.
Auckland,		300	
Barbadoes,	20		
Benin,	600		
B. Ayres,	25		20 dms.
Buguma,	250		
Calcutta,	5		875 bds.

Callao,	15		
C. C. Castle,	100		
Cape Town,		562 cs.	
Chefoo,	31		
Constantinople,		60	
Corfu,		3	
Delagoa Bay,	1,200	35	55
Dunedin,		400	
E. London,	600	10	
Gibraltar,	118		
Gd. Bassam,	25		
Hamburg,		73 cks.	
Havana,		460	
Havre,			
Hong Kong,		40 dms.	
Iquitos,	150		
Jersey,	21		
Lagos,	63		
La Plata,	8		
Las Palmas,	140	2	
Madras,		155	
Manaos,	530		
Melbourne,	10		
Montego Bay,	10		
Montreal,		1,300	
Mossel Bay,	875		
N. Orleans,	200		
New York,	339	91	
Oporto,	9		
Para,	200		
Pelotas,	15		
Penang,	105	5	
Philadelphia,		1	1 ck.
Piræus,	21		
Pt. Elizabeth,	500	603	
Pt. Natal,	524	25	25 bds.
Rangoon,	600		
Rotterdam,	305	545	
Rouen,		50	
St. John's, Nfld.,	165		
St. Thome,	60		
Sapeli,	400		
Shanghai,	4,883		
Sierra Leone,	109		
Singapore,	777		
Sydney,		1,000	
Teneriffe,	774		
Valparaiso,		1	
Vera Cruz,	80		
Warri,	700		
Wellington,		500	

Soda Alkali—

Odessa,		82 cks.	
Para,		50 cs.	
Piræus,		41	
Pt. Natal,	200 bgs.		
Salonica,		16	
San Sebastian,		33	
Smyrna,	200 brls.		
Valencia,	500	50	
Wellington,		4 dms.	

Soda Ash—

Antwerp,	2,655 bgs.	30 cks.	
Bahia,		20 brls.	
Baltimore,	800	64 tcs.	
Barcelona,		400 bxs.	
Boston,	2,624	93	45
B. Ayres,		72 cs.	
Calcutta,		150	
Colon,		87	
Corfu,		10 brls.	
Genoa,	1,062	30	
Ghent,		148	
Hamburg,	25		
Hioho,		486	
Libau,	700		
Maranham,	25	10	
Messina,		19	
Montreal,	560		
New York,	1,200	133	
Oporto,		28	
Pernambuco,		100	
Philadelphia,	1,480	149 tcs.	46
Rio de Janeiro,		20 kgs.	40
Rotterdam,	1,917 bgs.	275 brls.	
Samarang,		30	
Seville,		40	
Venice,	200	18	
Vera Cruz,		14 dms.	

Soda Crystals—

Colon,		10 brls.	
Corfu,		25	
Hamburg,	258 kgs.	42 pks.	
Montreal,	212	200	
Pt. Natal,	150 bgs.	125 cks.	
Quebec,		30 pks.	
Boston,	50	100	
Malta,		50 cks.	

Sodium Arseniate—

Lisbon,	19 c.	2 q.	£11
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Sodium Bicarbonate—

Antwerp,		20 kgs.	
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Barbadoes,		2 cks.	
Barcelona,	115		
Batavia,	35		
Brisbane,	195		
Calcutta,	825		
Cape Town,	20		
E. London,	4		
Genoa,		2 pks.	8
Gibraltar,			8
Hamburg,	107		200
Hioho,	1,100		6
Hong Kong,	14		
Kingston,	40		
Lisbon,	30		
Lyttelton,	100		
Malta,	39		
Melbourne,	67		
Metelin,	10		
Montreal,	895		22
N. Orleans,		83 brls.	
Odessa,	1,460		
Quebec,	300		
Rotterdam,	25		
Rouen,	155		
St. John's, N.B.,	20		
Santos,		10	
Singapore,		13	
Smyrna,	40		
Sydney,	300		
Trieste,	20		
Valparaiso,			4
Vancouver,	50		
Victoria, B. C.,	50		

Caustic Soda —	
Alexandria,	40 dms.
Copper Sulphate —	
Alexandretta,	5 cks.
Cottonseed Oil —	
Tunis,	160 brls.
Creosote —	
Boulogne,	22 cks.
Disinfectants —	
Larnaca,	1 cs.
Glue —	
Rotterdam,	25 cks.
Linseed Oil —	
Alexandria,	6 brls.
Painters' Colours —	
Larnaca,	1 kg.
Pitch —	
Cette,	600 t.
Potassium Bichromate —	
Alexandretta,	2 cks. 1 brl.
Alexandria,	1
Soda —	
Tunis,	10 kgs.
Soda Ash —	
Lattakia,	40 brls.
Sodium Bicarbonate —	
Aleppo,	10 brls.
Tar Oil —	
Rotterdam,	10 brls. 5 dms.
Hamburg,	4 cks.

HULL.

Week ending October 16th.

Alkali —	
Bergen,	1 ck.
New York,	110 dms.
Stockholm,	1 cs.
Aniline Colours —	
New York,	3 cks.
Antimony —	
Boston,	15 cks.
Bleaching Powder —	
New York,	104 cks.
Chemicals (otherwise undescribed)	
Amsterdam,	169 cks.
Antwerp,	3
Christiania,	30 cs.
Copenhagen,	15
Drontheim,	14
Ghent,	2
Gothenburg,	10 36 100 pks.
Hamburg,	18 40 2,559 slbs.
New York,	665 125
Norrköping,	10
Riga,	78
Rotterdam,	14 30
St. Petersburg,	30 5
Cottonseed Oil —	
Amsterdam,	150 c.
Antwerp,	1,101
Christiania,	11
Copenhagen,	58
Gothenburg,	140
Harlingen,	100
Hamburg,	1,524
Königsberg,	151
Norrköping,	60
Rotterdam,	122
Stockholm,	100
Creosote —	
Hamburg,	5 bls.
Dyestuffs (otherwise undescribed)	
Amsterdam,	154 cks.
Boston,	6
Christiania,	42 bls.
New York,	3 cks.
Linseed Oil —	
Amsterdam,	169 c.
Antwerp,	1,600
Aalesund,	17
Christiania,	214
Christiansand,	35
Copenhagen,	34
Christiansund,	43
Hamburg,	350
Manure —	
New York,	100 cks.
Ochre —	
Hamburg,	7 cks.
Paint —	
Antwerp,	49 cks.
Painters' Colours —	
Amsterdam,	13 cks.

Antwerp,	51 cks. 2 cs. 13 dms.
Boston,	25
Christiania,	1 1 2
Copenhagen,	4 3 16 dms.
Drontheim,	40 8
Ghent,	3
Gothenburg,	1
Hamburg,	1
New York,	149 10 20 pks.
Rotterdam,	3 3 25 dms.
Stockholm,	42
Stavanger,	1
St. Petersburg,	3
Soap —	
Amsterdam,	26 cs.
Bergen,	20
Drontheim,	80
Tallow —	
Gothenburg,	10 cks.
Stockholm,	26
Tar —	
Antwerp,	1 ble.
Bergen,	1 cs. 9
Hamburg,	15 cks. 8
Varnish —	
Amsterdam,	2 cs.
Antwerp,	1
Christiania,	2
Copenhagen,	1
Ghent,	1 ck.
Gothenburg,	2
Hamburg,	2
Stockholm,	2 3 bls.

GLASGOW.

Week ending October 21st.

Ammonium Carbonate —	
Christiania,	£ 1
Ammonium Sulphate —	
Nantes,	30 t. 4½ c.
Bleaching Powder —	
Calcutta,	102 t.
Melbourne,	6 6½ c.
Borax —	
Antwerp,	£75
Castor Oil —	
Fremantle,	£22
Caustic Soda —	
B. Ayres,	11 t. 10½ c.
Chloroform —	
Fremantle,	£34 10s.
Coal Products —	
Benzine	
France,	£60
Benzol	
Hamburg,	5 t. 5 c.
Rotterdam,	11 brls.
Creosote Oil —	
France,	£150
Hamburg,	66 t.
Creosote Salts —	
U.S.A.,	£135
Gambier —	
Algoa Bay,	£30
Pitch —	
France,	£105
New York,	96
Hamburg,	318 t. 13 c.
Calcutta,	61
Santander,	1,053
Canada,	872
Gothenburg,	493
U.S.A.,	326
Tar —	
Rangoon,	£124
U.S.A.,	95
Canada,	100
Hamburg,	232 t. 5 c.
Tar and Pitch	
Madras,	£65
Dextrine —	
Canada,	1 t. 15 c.
U.S.A.,	17 11¾
Dyestuffs (otherwise undescribed)	
Rotterdam,	£214
Extracts —	
Cornwall,	£1,393
Montreal,	295
Victoria, Aus.,	98
Farina —	
U.S.A.,	£60
Linseed Oil —	
Hong Kong,	5 t. 10 c.
Nagasaki,	2 5¾
Singapore,	5 8¾
Canada,	8 13¾
Litharge —	
Johannesburg,	£21

Ochre —	
U.S.A.,	£36
Paint —	
Johannesburg,	£31
New York,	75
Pt. Louis,	40
Colombo,	75
Fremantle,	30
Sandefjord,	30
Painters' Colours —	
Calcutta,	£442
Rotterdam,	123
St. John's, Nfld.,	qty.
Adelaide,	"
B. Ayres,	"
Melbourne,	"
Christiania,	£6 19s.
Montreal,	£177
Paraffin Wax —	
Cape Town,	£27 10s.
B. Ayres,	22
Skien,	37 10
Potash Salts —	
Mexico City,	£295
Potassium Bichromate —	
U.S.A.,	£238
Canada,	237
Potassium Cyanide —	
Fremantle,	£270
Sheep Dip —	
B. Ayres,	£82
Soap —	
U.S.A.,	1 t. 5 c.
Adelaide,	1 ½
Soda Crystals —	
Calcutta,	4 t. 9¼ c.
Sodium Bichromate —	
U.S.A.,	5 t. 3¾ c.
Starch —	
Natal,	£25
Rotterdam,	2 t.
Sulphuric Acid —	
Colombo,	£140
Madras,	61
Rangoon,	32
Treacle —	
Gothenburg,	50 t. 3½ c.
Talcabuan,	2 10
Turpentine —	
Yokohama,	£121
White Lead —	
Natal,	£37

TYNE.

Week ending October 16th.

Alkali —	
Amsterdam,	10 t. 15 c.
Reval,	22 6
Venice,	3 8
Ammonia —	
Gothenburg,	1 t. 2 c.
Ammonium Carbonate —	
Hamburg,	10 c.
Ammonium Sulphate —	
Barcelona,	30 t.
Antimony —	
Hamburg,	1 t.
Rotterdam,	8 10 c.
Montreal,	9
Barcelona,	1
Arsenic —	
Barcelona,	2 t. 3 c.
Asbestos —	
Bergen,	5 c.
Barium Binoxide —	
Antwerp,	15 t. 4 c.
Barium Carbonate —	
Reval,	100 t.
Rouen,	30 5 c.
Hamburg,	10
Bleaching Powder —	
Antwerp,	5 t. 1 c.
Rotterdam,	2 10
Christiania,	16 10
Amsterdam,	14 6
Ghent,	25 3
Copenhagen,	7 11
Bergen,	16 11
St. Petersburg,	137 1
Dunkirk,	4 19
Caustic Soda —	
Hamburg,	20 t. 17 c.
Rotterdam,	6 11
Gothenburg,	6

Christiania,	32 4
Montreal,	29
Reval,	9 10
Pernau Town,	24 5
Barcelona,	95 19
Bergen,	2 18
Venice,	31 16
St. Petersburg,	51 18
Creosote Oil —	
Rouen,	1 t. 4 c.
Linseed Oil —	
Alexandria,	3 brls.
Litharge —	
Gothenburg,	16 c.
Christiania,	1 t. 6
Magnesia —	
Hamburg,	6 c.
Barcelona,	11 t. 3
Valencia,	11
Manure —	
Gandia,	95 t.
Valencia,	161
Paint —	
Hamburg,	1 t. 2
Antwerp,	6
Christiania,	1
Copenhagen,	14
Soda —	
Antwerp,	5 t.
Rotterdam,	20
Christiania,	20 2 c.
Amsterdam,	40 4
Venice,	22 16
Soda Ash —	
Venice,	10 t. 14 c.
Sodium Hyposulphite —	
Hamburg,	19 c.
Montreal,	10 t. 1
Sodium Sulphate —	
Hernosand,	1,037 t. 5 c.
Sulphur —	
Gothenburg,	5 t.
Christiania,	350
Superphosphates —	
Valencia,	50 t.
Tar —	
Hamburg,	8 t.
Rouen,	20 3 c.
White Lead —	
Montreal,	35 t. 11 c.
Alexandria,	2 cks.
Zinc White —	
Alexandria,	1 ck.

GOOLE.

Week ending October 13th.

Chemicals (otherwise undescribed)	
Amsterdam,	20 cks.
Ghent,	4 cs.
Hamburg,	21 60 dms.
Coal Products (otherwise undescribed)	
Boulogne,	55 cks. 2 cs.
Hamburg,	40
Rotterdam,	183 2
Colours —	
Antwerp,	1 ck.
Rotterdam,	7 cs.
Dyestuffs (otherwise undescribed)	
Ghent,	3 cks.
Hamburg,	2 cs.
Pitch —	
Antwerp,	75 t.
Soap —	
Antwerp,	18 cs.

GRIMSBY.

Week ending October 16th.

Alkali —	
Malmo,	1 ck.
Hamburg,	10
Aniline —	
Dieppe,	2 cs.
Caoutchouc —	
Malmo,	2 cs.
Coal Products (otherwise undescribed)	
Rotterdam,	10 brls.
Colours —	
Antwerp,	3 cs.
Hamburg,	1 ck.
Naphtha —	
Dieppe,	77 cks. 27 brls.
Soap —	
Gothenburg,	1 cs.

PRICES CURRENT.

WEDNESDAY, OCT. 27TH, 1897.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.B. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary

Acids:—

	£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/9	& 8/9
" Glacial	"		40/-
Arsenic S.G., 2000°	"	1	4 0
Fluoric	per lb.	0	0 3½
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0 10
" (Cylinder), 30° Tw.	"	0	3 0
Nitric 80° Tw.	per lb.	0	0 1½
Nitrous	"	0	0 1½
Oxalic	nett	0	0 3½
Phosphoric, 1750°	"	0	0 11½
Picric	"	0	0 11
Sulphuric (fuming 50 %)	per ton	15	10 0
" (monohydrate)	"	5	10 0
" (Pyrites, 168°)	"	3	0 0
" " 150°	"	1	5 0
" (free from arsenic, 145°)	"	1	7 6
Sulphurous (solution) S.G. 1025	"	3	0 0
Tannic (pure)	per lb.	0	1 2½
Tartaric	"	0	1 1½
Arsenic, white powdered	nett per ton	21	15 0
Alum (loose lump)	"	4	10 0
Alumina Sulphate (pure)	"	4	2 6
Aluminaferric	"	2	3 6
Aluminium (Ingot metal 98/99¾ %	nett	148	0 0
Ammonia, Anhydrous	per lb.	0	1 3
" 880=28° B.	"	0	0 2½
" =24° B.	"	0	0 1½
" Carbonate	nett	0	0 3
" Muriate	per ton	18	0 0
" (sal-ammoniac) 1st & 2nd	per cwt.	33/-	& 31/-
" Nitrate	per ton	31	0 0
" Phosphate	per lb.	0	0 3½
" Sulphate (grey) London	per ton	8	7 6
" (grey) Hull	"	8	5 0
Aniline Oil (pure)	per lb.	0	0 7
Aniline Salt	"	0	0 7
Antimony	per ton	29	10 0
" (tartar emetic)	per lb.	0	0 8
" (golden sulphide)	"	0	0 10
Barium Chloride	per ton	6	10 0
" Carbonate (native)	"	3	10 0
" Sulphate (native levigated)	"	42/6	to 65/-
Bleaching Powder, 35 %	nett	6	2 6
" Liquor, 7 %	"	3	10 0
Bisulphide of Carbon	"	12	0 0
Chromium Acetate (crystal)	per lb.	0	0 6
Calcium Chloride	per ton	2	5 0
China Clay (at Runcorn) in bulk	"	15/-	to 30/-
Coal Tar Products and Dyes:—			
Alizarine (artificial) 20 %	nett per lb.	0	0 6¾
Magenta	"	0	3 0
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0	0 6
Benzol, 90's	per gallon	0	2 0
" 50/90	"	0	2 0
Carbolic Acid (crude 60°)	per gallon	0	1 10
" (crystallised 40°)	per lb.	0	0 6¾
" (liquid 95/97%)	per gallon	0	1 0
Creosote (ordinary)	"	0	0 2½
" (filtered for Lucigen light)	"	0	0 3
Crude Naphtha 30 % @ 120° C.	"	0	0 10
Grease Oils, 22° Tw.	per ton	2	15 0
Pitch, f.o.b. Liverpool or Garston	"	0	18 0
Solvent Naphtha, 90 % at 160°	per gallon	0	1 7
Copper	per ton	47	17 6
" Sulphate	"	16	7 6
" Oxide (copper scales)	"	44	10 0
Glycerine (crude)	"	27	0 0
" (distilled S.G. 1250°)	"	40	0 0
Iodine	nett, per oz.	0	0 7½
Iron Sulphate (copperas)	per ton	1	10 0
" Sulphide (antimony slag)	"	2	0 0
Lead (sheet)	"	14	15 0
" Litharge Flake (ex ship)	"	17	0 0
" Acetate (white ")	"	23	0 0
" " brown ")	"	17	0 0
" Carbonate (white lead) pure	"	17	0 0
" " impure	"	20	0 0

	£	s.	d.
Lime, Acetate (brown) (ex ship)	per ton	5	10 0
" (grey) (ex ship)	"	5	0 0
Magnesium (ribbon and wire)	per oz.	0	2 10
" Chloride (ex ship)	per ton	2	10 0
" Carbonate	per cwt.	1	17 0
" Calcined Magnesia	per ton	8	0 0
" Sulphate (Epsom Salts)	per ton	2	15 0
Manganese, Sulphate	"	16	0 0
" Borate	per cwt.	2	10 0
" Ore, 70 %	per ton	3	10 0
Methylated Spirit, 61° O.F.	per gallon	0	0 8
Naphtha (Wood), Solvent	"	0	0 9
" " Miscible, 60° O.P.	"	0	0 8
Oils:—			
Cotton-seed	per ton	16	1 0
Linseed	"	16	1 0
Stearine	per ton	22	0 0
Phosphorus (yellow)	per lb.	0	0 0
" (red)	"	0	0 0
Potassium (metal)	per oz.	0	0 0
" Bichromate	nett per lb.	0	0 0
" Carbonate, 90% (ex ship)	per ton	16	1 0
" Chlorate	per lb.	0	0 0
" Cyanide, 98%	"	0	0 0
" Hydrate (Caustic Potash) 90 %	per ton	23	1 0
" " (Caustic Potash) 75/80 %	"	19	1 0
" Potash Hydrate Liquid 50 %	"	11	1 0
" Nitrate (refined)	per cwt.	1	0 0
" Permanganate	per cwt.	3	15 0
" Prussiate Yellow	per lb.	0	0 0
" Sulphate, 90 % (ex ship)	per ton	9	1 0
" Muriate, 80 % (do.)	"	8	10 0
Silver (metal)	per oz.	0	2 0
Sodium (metal)	per lb.	0	0 0
" Carb. (refined Soda-ash) 48 %	nett per ton	4	15 0
" " (Caustic Soda-ash) 48 %	"	4	5 0
" " (Carb. Soda-ash) 48 %	"	4	0 0
" " (Alkali) 58 %	"	3	17 0
" " (Soda Crystals)	"	2	5 0
" Acetate (ex-ship)	"	10	10 0
" Arseniate, 45 %	"	14	7 0
" Chlorate	per lb.	0	0 0
" Borate (Borax)	net, per ton	14	15 0
" Bichromate	per lb.	0	0 3½
" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	"	8	10 0
" " (74 % Caustic Soda)	"	8	2 6
" " (70 % Caustic Soda)	"	7	7 6
" " (60 % Caustic Soda)	"	6	7 6
" " (pure liquor 90° Tw.)	"	3	12 6
" " 77/78 % powdered (99 % hydrate)	"	12	10 0
" Bicarbonate	"	6	10 0
" Hyposulphite	"	5	0 0
" Manganate, 25%	"	15	0 0
" Nitrate (95 %) ex-ship Liverpool	per cwt.	0	7 4½
" Nitrite, 98 %	per ton	26	10 0
" Phosphate	"	9	10 0
" Silicate (glass)	per ton	4	10 0
" " (liquid, 100° Tw.)	"	3	7 6
" Stannate, 40 %	per cwt.	3	2 9
" Sulphate (Salt-cake)	per ton	0	19 0
" " (Glauber's Salts)	"	1	7 6
" Sulphide	"	6	15 0
" Sulphite	"	5	0 0
Strontium Hydrate, 100%	"	10	15 0
Sulphocyanide Ammonium, 95 %	per lb.	0	0 5¾
" Barium, 95 %	"	0	0 4
" Potassium	"	0	0 6¾
Sulphur (Flowers)	per ton	7	10 0
" (Roll Brimstone)	"	6	10 0
" Brimstone: Best Quality	"	4	10 0
Superphosphate of Lime (26%)	"	2	5 0
Tallow (Beef)	"	18	10 0
Tin Crystals	per lb.	0	0 4¾
" English Ingots	per ton	65	10 0
Zinc (Spelter)	"	17	17 6
" Chloride (solution, 100° Tw.)	"	5	10 0
" Sulphate, Crystal	"	5	2 6

rence has been known for a long time to botanists, but it has never been considered dangerous. This year, however, it has assumed proportions in the West of Ireland which show that it must be classed as one of the devastating diseases liable to menace the potato crop. It is probable that the extent of the outbreak will provoke an official inquiry. At the same time, it is in a dilemma such as this that the fertilizer and insecticide trade can show to advantage. It is just such problems that our Teutonic rivals address their research chemists to, with the result that their work is almost always not only successful but profitable. Climatic and other conditions have naturally to be taken into consideration in seeking for a cure, but as a hint that may be of service we may suggest that the trade turn their attention to the bye-products from calcium carbide manufacture, and acetylene generator waste.

THE PRICE OF AMMONIA ALKALI.

[SPECIALLY COMPILED.]

THE following table has been specially compiled for the *Journal*, and will, we think, prove of interest and service to all those connected with the chemical and allied trades. This year has been brought down to June only, since when the price has not changed.

1893.		1894.		1895.	
DATE.	PRICE.	DATE.	PRICE.	DATE.	PRICE.
	£ s. d.		£ s. d.		£ s. d.
Jan. 1	5 7 6	Jan. 1	4 2 6	Jan. 1	4 0 0
March 15 ..	5 5 0	March 14 ..	3 10 0	Feb. 13 ..	3 15 0
March 29 ..	5 2 6	April 11 ..	3 15 0	Feb. 20 ..	3 12 6
May 3	5 0 0	Aug. 22 ..	3 12 6	March 13 ..	3 10 0
July 12	4 10 0	Oct. 10 ..	3 15 0	May 15 ..	3 7 6
Nov. 1	4 5 0	Dec. 5 ..	3 17 6	Sept. 11 ..	3 12 6
Nov. 15 ..	4 2 6	Dec. 12 ..	4 0 0	Sept. 25 ..	3 15 0
Dec. 31	4 2 6	Dec. 31 ..	4 0 0	Nov. 13 ..	3 17 6
				Dec. 31 ..	3 17 6

1896.		1897.	
DATE.	PRICE.	DATE.	PRICE.
	£ s. d.		£ s. d.
Jan. 1	3 17 6	Jan. 1	3 10 0
Jan. 8	3 15 0	March 17 ..	3 17 6
Sept. 16 ..	3 12 6	June 30 ..	3 17 6
Sept. 30 ..	3 10 0		
Dec. 30 ..	3 10 0		

Explanation.—To prevent any misunderstanding it may be stated that the tables are a record of the changes in price only. The dates are, as nearly as possible, those on which the changes took place, and the price quoted obtained during the whole of the interim, e.g., in 1897 the price on January 1st was £3. 10s. and this price remained unaltered for three months, when, on March 17th, the price was advanced to £3. 17s. 6d.

A BOLD CHILIAN SCHEME.

ACCORDING to the *Financial News*, Don Santiago L. Mardones has petitioned Congress for a concession to colonise by means of irrigation the Tamarugal district of the Province of Tarapacá, which to-day is a sandy desert, valuable only for its nitrate grounds. For the purpose of irrigating these sands he proposes to utilise, by means of aqueducts, the watershed of the Cordillera range of mountains, the streams from which are fed by the melting snow. The area covered by the scheme is no less than 1,800 square miles.

The idea is not altogether new, as in 1765 the then Viceroy of Peru attempted something of the sort, and did actually construct some 20 or 25 miles of aqueducts. *El Pueblo*, in criticising the scheme, refers to the value that the agricultural district, if thus created, would have as a field for the cultivation of coffee, sugar, tobacco, &c., which, it thinks, might realise 200,000,000 dols. per annum. As the total present revenue of Chili falls far short of 100,000,000 dols., the figures as a mere possibility are startling. The project itself, in the absence of the opinion of expert engineers, can only be described as visionary.

THE MERSEY AND IRWELL JOINT COMMITTEE.

THE usual monthly meeting of this Committee was held on Monday at the offices, Mosley-street, Manchester, Mr. T. W. Killick presiding.—On the motion of Mr. Haslam, on behalf of the Consulting Sub-committee, an extension of time was granted to various authorities for the completion of sewage works. In regard to the Manchester works, the Chairman pointed out that the analyses for this and previous months were worse than those of last year during the same months, according to the permanganate tests.

Mr. Alderman M'Dougall admitted that the tests were perfectly accurate, but urged that the case was not as bad as it appeared to be.

Dr. Hewitt said that Manchester admitted the manufacturing source of pollution quite voluntarily, but that was no reason why the Joint Committee should let Manchester put its bad sewage into the Skir Channel or elsewhere. It might be quite right to give manufacturers the privilege, but the Committee had to look at the effect of the effluent on the stream or on the canal.

THE MANCHESTER SEWAGE.

The Clerk (Mr. F. C. Hulton) read a letter from the Town Clerk of Manchester (Mr. W. H. Talbot) stating the result of the poll on the Manchester culvert scheme, and asking the Joint Board to consent to a further extension of time to enable the Corporation to consider the course to be taken by them.

The Chairman: It might be advisable to consider this letter.

Mr. V. K. Armitage moved that the clerk be instructed to assent to such order and reasonable extension of time as the Court might think fit. In other words, he said, they wished to leave the matter before the Court, where already it rested. They wished the responsibility to be the responsibility of the Court, and not the responsibility of that Committee. At the same time they wished to offer no objection to the application of Manchester in this case, inasmuch as they considered it to be a reasonable application. They all knew the result of Saturday's poll on the culvert scheme. On that matter he would only say, generally, having read all that had been said in the papers, that he looked on the vote of the ratepayers as being a purely negative one. It was a vote simply against the culvert. He believed in his heart of hearts that if any other definite scheme had been before the ratepayers there would have been an equally large majority against it, whatever it was. This was a not altogether educated protest against spending any more money in connection with sewage. That was the light in which he looked upon the vote. The vast number of ratepayers seemed to have voted against the scheme because it involved a large expenditure of money, and on the same ground any other scheme would have been objected to. That was a ridiculous position. Manchester knew that not only a sum of money but a large sum of money would have to be spent. He would say no more than that he recognised the difficulty Manchester was in before this poll, and that it was greatly intensified by the action of the ratepayers. The Committee had not sought to harass Manchester, and, under all the circumstances they had simply to say to Manchester that if the Court could be persuaded to give the city further time the Committee would not oppose the application.

Dr. Hewitt, in seconding the motion, said he thoroughly agreed with what Mr. Armitage had said. The judgment in this matter should rest with the Court as to what was a reasonable time to give Manchester to reconsider its position. The Committee had never minimised the difficulty of the position, though he thought it was easy to magnify that difficulty. Understanding the scientific side of the question, he could not agree that Manchester had any more difficult task than Salford. He did not think either place had, except in degree, a more difficult task than that of other towns in dealing with sewage effluents. It was simply a question of degree. The pollution was of a high degree, and so far as it was high a considerable amount of expenditure would be required to deal with it satisfactorily. He agreed with Mr. Armitage that when the ratepayers were asked whether they would or would not spend a large sum of money they would express unwillingness.

Mr. Alderman Jenkins said he would have been glad if Manchester could have been given further time without going before the Court. He did not think it had done either side much good in going so much to law, and the ratepayers did not agree with them in that course. It would be only courteous to give time to Manchester, and, as an amendment, he moved that they do so.

The Clerk pointed out that the case was now before the Court.

The Chairman said they had made it a rule, as far as possible, when a case was before the Court to make a settlement in Court. Looking at the matter from all points of view, he thought it was desirable to follow the usual course in this case.

The amendment was not seconded, and the resolution was passed without dissent.

PERSONAL.—Mr. Cryll, manager of the United Alkali Company's works at Weston Point, Cheshire, has been appointed manager of the Flint Chemical Works in succession to the late Alderman Dyson, who died recently.

The Patent List.

is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of Davis and Alfred R. Davis, who report professionally in the name of Chemical Patents.

NOTIFICATIONS FOR ENGLISH LETTERS PATENT.

Toxicous Vapours. J. and H. J. G. Rudman. 23,913. October 18.
Bromides of Potash, etc., from Waste Blast Furnace
Gaseous Liquors. W. Galbraith. 23,916. October 18.
of Graphite. F. J. Bergmann. 23,957. October 18.
Isters. P. Cannel-Bunn. 24,038. October 19.
R. Fabian. 24,051. October 19.
of Calcium and other Carbides, and By-products. A. J.
1,077. October 19.
aste Leather. A. J. Boul. 24,080. October 19.
ts in Gas Producers. C. Bond. 24,093. October 19.
A. Luck and C. L. Nichols. 24,136. October 19.
of Paint. E. C. Lee, C. F. Lawton, A. L. and A. W. Lawton.
October 19.
of Cement. E. C. Lee and C. F. Lawton. 24,179. October 19.
rriage. R. B. Duncan. 24,180. October 19.
ers. R. O. W. Roberts. 24,176. October 20.
Sewage. A. J. and P. A. G. Bell. 24,342. October 21.
ts in Disintegrators. G. H. Pond. 24,429. October 22.
Hydrogen Gas and Air. H. A. Kent. 24,435. October 22.
ils. W. J. Engledue. 24,438. October 22.
of Paints, etc. A. Stoop. 24,504. October 22.
a Clay. A. C. Tulloch. 24,505. October 22.
of Brine, etc. C. C. Moor. 24,515. October 22.
of Bay Salt. A. MacNab. 24,524. October 22.
of Potash Salts. O. Imray. 24,525. October 22.
ic Ores. O. Imray. 24,526. October 22.
Distributor. T. C. Sergeant. 24,537. October 23.
Liquids for Given Periods at Given Times in Chemical
s. H. N. Prentice. 24,603. October 23.

NOTES OF LATEST COMPLETE SPECIFICATIONS.

Abstracts are specially prepared for the Chemical Trade Journal, and are published by permission of the proprietors. This is the earliest abstract of Chemical and allied patents accessible to the public.

Apparatus for Concentrating Sulphuric and other
E. Dyson, Vickers-street, Miles Platting, Manchester. Eng. Pat.
December 5, 1896.

Improvements on Patent 17,699, of 1896, are embodied in
tion. The blocks that form the arch to the heating flue,
h the rectifying vessels sit, are specially formed so as to step
also support the vessels without wedging. They are like-
d with apertures through which a portion of the heated
ss into the upper chamber in which the retorts are more or
l. These retorts are made of cast-iron, lined with acid-
terial. Two alternate devices are described for regulating
he acid. One method is to insert a diaphragm, or division
ng nearly to the bottom of the retort. This plate has a
e in which a cord of asbestos fits and makes a tight joint
es of the vessel. The other device is a tube dipping to the
ie retort and carrying, at its upper end, a perforated hori-
of less diameter than the retort, thus acting as a preventive
nt ebullition and splashing. The lower end of the tube is
h two or three branches looking upwards, so that the acid
at the bottom even if a collection of sediment chokes the
of the tube. The last two or three of the retorts are cut
heating chamber by a division wall, so that the acid cools
ere entering the cooler itself. There are nine figures.

Apparatus for Use in the Manufacture of White Lead.
es, of Pelhamville, Westchester, New York, U.S.A. Eng. Pat. 19,030.
1897.

Apparatus for carbonating protoxide, or acetate of lead, in
ion of white lead. It consists of a horizontal cylinder, the
ich is covered with perforated pallets or rib-plates. It is
hollow trunnions through which the necessary gases, such
oxide, steam, or oxygen can be introduced. By rotating
the contents are thoroughly exposed to the action of the
rell mixed. To prevent the gases blowing straight through
curved baffle plates are fitted opposite the entrance and
vex face of the plate being presented to the entrance and
side of the exit plate looking into the exit passage in the
tion. There are two drawings.

Improvements in or Connected with the Manufacture of Lead Pigments.

J. Fairlie, 12, Waterloo-street, Glasgow. Eng. Pat. 26,322. November 21, 1896.

When red lead is mixed with oil and allowed to stand, it settles to the bottom, and forms a hard, dry mass. This characteristic also makes it impossible to sell it in the paste form ready ground in oil. To overcome this difficulty, the addition of small amounts of salt, sulphates of magnesia and soda, chlorides of lime and magnesia, iodide and bromide of potash are suggested, the total addition not forming more than one per cent. of the bulk. This mixture of salt is ground in water with the red lead. After drying, the product can be ground in oil without subsequent settlement and caking.

Method of Drying Alkaline Cyanides.

J. D. Gilmour, Underwood Chemical Works, Lennoxtown, Stirlingshire, N.B. Eng. Pat. 29,922. December 29, 1896.

A given volume of air is passed through a heater, and then over the cyanide to be dried. It next enters a cooler, in which the moisture taken up by the air is condensed. The air is then returned to the heater, and so on. By using the same air over and over again the introduction of fresh quantities of carbon dioxide is avoided, this gas decomposing the cyanide. The amount present in the first batch of air is soon exhausted, and then the drying goes on without loss. As the cyanide must not be heated above 100 C., any condensed water from engines, &c., on the works can be used for heating the air.

THE MANCHESTER CLEANSING DEPARTMENT.

THE annual report of the Cleansing Committee, to be presented to the City Council on Tuesday next, states that during the year ended March 31st, 1897, the quantity of refuse collected and disposed of amounted to 354,364 tons, as compared with 337,606 tons during the previous year. The area of street surface swept and cleansed was 556,472,760 square yards, as compared with 543,330,704 square yards swept and cleansed during the previous year. The increased bulk of refuse removed and the larger area of street surface cleansed represent larger figures than have been previously dealt with. A profitable section of the department has been that of mortar making. The profits on the preparation of this article have been as under, viz.:—Water-street, £1,108. 3s. 4d.; Holt Town, £293. 5s. 7d.; Oldham-road, £277. 10s.; total, £1,678. 18s. 11d. The mortar is made from the clinkers from the destructors and lime ashes, and unless these clinkers were utilised a considerable cost would be incurred in carting them away. The operations at Oldham-road depot, have been of a successful nature. The amount received from the Sanitary Department during the year amounts to £4,026. This includes the cost of removing patients' bedding and clothing, the disinfection of articles removed, and also the disinfection and cleansing of infected houses. During the year 49,342 tons of material have been sent to Carrington; this is a little in excess of the previous year. "Seeing that the Committee obtained full possession of Chat Moss Estate on February 2 this year (1897)," the report says, "we are hoping that so soon as proper facilities are afforded for reaching that estate from the Ship Canal this figure will be reduced to less than one half, thus reducing the annual expenses at Carrington. With regard to the Carrington Farm account, the land farmed by your Committee consists of about 400 acres, and the amount charged to the farm for rent during the year was £933. 1s.; all other expenses in connection with the farm at Carrington have been debited to the farm account, and credit has been given for all revenue derived purely from the farm. It is satisfactory to note that a profit has been made upon the farming operations. Very little revenue has been derived from rents upon the Chat Moss Estate, although your Committee have spent a considerable amount in building and repairs; but during the next year, when the full rental will be in active operation, we anticipate receiving for rents alone from that estate about £4,500. This will then materially reduce the year's expenses." During the year the sum of £99,334. 4s. 10d. has been paid in wages alone; and the amount realised for the sale of concentrated manure, nightsoil, street sweepings, mortar, &c., has been £41,080. 9s. 4d.

DESTRUCTIVE FIRE.—A fire occurred on Wednesday at the premises of the Brades Steel Works, Oldbury. The fire is believed to have originated in one of the stock rooms containing a large quantity of wood for the hafting of edged tools. The flames quickly spread to the roof of the building and to the stores and pattern shops. A good supply of water was available, the Birmingham Canal being situated close to the works, and a large volume of water was poured upon the burning mass of buildings. By the time the brigade arrived the flames had, however, got a firm hold of the buildings, and the stores and pattern shops were completely gutted before the fire was got under. The damage to stock and buildings is roughly estimated at between £10,000. and £15,000., and the loss is covered by insurance. The firemen were engaged for about nine hours.

SOCIETY OF CHEMICAL INDUSTRY.

NOTTINGHAM SECTION.

THE first meeting of the present session of the above Section was held at University College, Nottingham, on Wednesday evening, October 27th, Mr. James O'Sullivan being in the chair. There was a good attendance, amongst those present being Dr. F. Clowes (the President), Mr. Caven, Dr. Sudborough, Mr. Ward, Mr. J. T. Wood, etc. A recent indisposition of the Chairman, who had been compelled to postpone an intended address, was the reason for Mr. Carulla again appearing before the members at the beginning of a session. He read a paper on "Nitrate of Soda in Iron Metallurgy," in which the author gave an account of the Heaton process, that at one time promised to require large quantities of nitrate of soda for decarburising and purifying iron in the manufacture of steel. An unpublished report on some experiments made at Langley Mill in 1869, and witnessed by W. Mattieu Williams, chemist to John Brown and Co., Ltd., was read to the meeting by the kind permission of Mr. J. D. Ellis, the Chairman of the Company. Mr. Carulla thinks that whilst there seem to have been distinct possibilities in the process, there is every evidence that it was wrecked for want of chemical supervision. "Had Siemens been similarly indifferent to chemical assistance it is almost certain that the open-hearth process would have accompanied that of Heaton into oblivion." Although no modifications are likely now to make the Heaton process able to compete amongst us with the modern methods of making steel, yet Mr. Carulla thinks it not impossible that, with the improvements that never knowledge could suggest, the process might be found useful where the nitrate is produced. "The ships that bring nitrate of soda to us could return laden with pig iron and coke for the manufacture of steel. Such a demand on our blast furnaces and coke ovens would be a welcome addition to our trade. The ever-expanding requirements of the various South American nations would turn them into markets for the products from the Chilean works. If such a possibility were realised, even in a small measure, it should be a special satisfaction to the members of the Nottingham Section of our Society, in view of the fact that the nitrate process of making steel originated at Langley Mill.

Mr. G. J. Ward said that on the ground of cost alone he saw no hope for the nitrate of soda process. It would obviously be wasteful to use so expensive a source of oxygen as nitrate of soda for taking out the carbon and silicon from pig iron when atmospheric oxygen was so inexpensive; and, admitting that the blowing machinery was costly, the enormous outputs of the finished steel rendered this a matter of indifference. As to the phosphorus, the basic Bessemer process would take that out more efficiently and cheaply than the Heaton process could do. He did not wonder at the violent action described as taking place in the Heaton converter. The deliquescent nature of nitrate of soda would contribute much to the violence of the operation by the disengagement of steam. It might be interesting to state that he had seen not long ago some specimens of steel recently made by the nitrate of soda process which stood some marvellous tests. The specimens shown to him were $1\frac{1}{4}$ inches thick, and had been bent double on themselves. He regretted that Mr. Carulla was unable to tell him anything as to where the process was now being carried on.

Dr. Clowes, president of the society, said he quite concurred with the remarks of Mr. Ward, and hence did not quite understand whether the author advocated the establishment of works to give the Heaton process another trial. He (Dr. Clowes) was at a loss to see how to properly mingle the nitrate of soda with the molten iron so as to produce the desired effect economically. The Bessemer process seemed to have done the work of decarbonisation for us once for all. The output is so large for a given plant that the cost becomes a mere trifle.

Mr. Caven remarked that the evolution of nitric oxide which would necessarily occur in such a process as the one described would very likely contribute to the explosive and violent character of the action. Mr. Feilmann said the presence of nitrogen in some of the steels, analyses of which had been given that evening, might account for their different mechanical behaviour when compared with other steels of similar chemical composition as regarded those elements that were usually estimated.

Mr. Golding asked whether the slag from the Heaton converter was a difficult one to grind. It was mentioned in the paper that this slag contained from about 6 to 12% of phosphoric acid. This would make an excellent manure when compared with some basic slags that had recently come under his notice containing less than one per cent. of phosphoric acid! He certainly thought the agriculturist should be on his guard against such frauds, which could only injure the industry. He had been surprised to learn from a friend abroad that a large number of nitrate of soda producing places in Chili were closing down. He hardly understood why this should be, in view of the great demand that existed for nitrate for agricultural purposes. Mr. Adams took objection to a specimen, the analysis of which showed the presence of 40% of graphite being called a "steel."

Dr. Sudborough remarked it was of course clear that the comparisons made in the paper were between the Heaton and the old or acid Bessemer processes. The introduction of the basic lining by which the phosphorus could be removed in the Bessemer process had altered many of the conditions. In regard to the slag, he would point out that of course one much richer in phosphoric acid might possibly be produced by using a pig more highly charged with phosphorus in the Heaton process. If such a pig were employed, however, it would be necessary to use more nitrate of soda to effect its conversion into steel with a consequent increase in the cost of the operation. The Chairman said he failed to see how the process of Heaton could be made to yield a constant product, and thought more analyses were needed to enable one to form a true judgment on its actual technical value.

Mr. Carulla replied, saying that in order to get a less violent action in the operation, and also to obtain a more regular product, it had been suggested to use a funnel shaped container for the nitrate of soda. This, no doubt, would tend to produce the desired effect, for as the charge of molten iron became presumably hotter by the chemical action going on in the converter, a diminishing surface of nitrate of soda would be acted upon and less gas be disengaged, thus prolonging the action and making it more effective. At the same time it would not be at all unlikely that such an arrangement might make the nitrate of soda suddenly go up bodily to the top of the molten iron, owing to the difference of specific gravity between the two substances. He (the author) would also suggest that the nitrate of soda should be dried, to get rid of the moisture always present in the commercial salt. This would not only tend to moderate the violence mentioned and contributed to by the production of steam, but would also reduce the amount of heat abstracted and which is so necessary to keep the final product in a molten condition. This seemed to him a most important point which in any new experiments should not be overlooked. There was always waste heat in ironworks that could be applied to such a purpose, so that the cost need not be considered. The slag from the Heaton process contained metallic iron which would render it a rather difficult article to grind. With improved practice and a hotter final product this objection would probably be removed. It would appear from recent statistics, that what was natural to expect has actually occurred, and that at the low relative price of sulphate of ammonia, this is largely taking the place of nitrate of soda for agricultural purposes. Doubtless, this is the cause of the closing of places in Chili referred to by Mr. Golding. In reply to Dr. Clowes, he could only say that the object of reading the paper was, to some extent, with the hope that some of the nitrate of soda might be kept in South America. (Laughter). He had himself used many hundreds of tons of British pig iron and coke on that continent, and he thought every effort should be made to extend a demand so useful to the English market.

NITRATE PRODUCERS' STEAMSHIP COMPANY, LTD.—An interim dividend at the rate of $7\frac{1}{2}$ per cent. per annum.

CYANIDE WORKS AT MERCUR, UTAH.—There are now six cyanide works in operation in the Mercur district, or about to be started, with a nominal capacity of 760 tons per diem. The new Northern Light mill is working on an ore that carries more silver than gold, and its successful treatment has yet to be demonstrated. La Cigale mill is nearly completed, but it is unlikely that any ore will be treated before November. Several interesting innovations have been introduced in this mill, the chief of which is the self-dumping rectangular tanks. The new Chloride Point mill is expected to be in operation in December, and that of the De La Mar Mercur mines, which is planned to treat 500 tons per diem at the outset, is also expected to be ready before the end of the year. The capacity of the latter works is to be increased to 800 tons per diem before 1898. The Chloride Point and De La Mar mills are not included in the above statement of the present milling capacity of the district, 760 tons a day. The Sunshine mill is idle.—*Engineering and Mining Journal.*

A NEW ELECTRIC LAMP.—Mr. Hiram S. Maxim, the inventor of the Maxim gun and of cordite, and one of the earliest pioneers of electric lighting in the States, is said to have recently perfected some improvements in electrical illumination, for which he claims advantages over every other known system, and which will reduce the item of cost of such illumination to the level of, if not below, that of common gas. The ordinary lamps now used have 16-candle power; this new lamp has 40-candle power. Taking the Watt unit of electrical energy, the American lamps require four and eight-tenths to five Watts to the candle power. The best English lamps take four and two-tenths to the candle power. The new Maxim lamp takes only two and eight-tenths to the candle power. It is believed that this invention, which includes a new filament and lamp, will create some noise in the electric lighting world. It can be applied to every existing system, and may, perhaps, be welcomed alike by the various companies that produce and the public who use electricity for illuminating purposes. Time and experiment, of course, will show.

CALCIUM CARBIDE WORKS AT GENEVA.

THE authorities at Geneva, Switzerland, who control the electric light plant situated at Vernier, have decided to utilise the idle hours of their plant into the manufacture of calcium carbide. As the dynamos are driven by turbines operated by abundant water power, the enterprise will start out under the best of conditions.

In order to reduce manual labour charges as much as possible, the pulverising of the coke, mixing the lime and carbon, and other operations are performed mechanically. From the time the crude material is received until it comes from the furnace, but one man's labour is required, most of the operations being automatic. They pay special attention to the use of good material and to the attaining of a good product which will be sought after for the production of acetylene for car lighting where a pure quality is especially required.

The coke used contains but five per cent. of ash and costs £2. per 2,204 pounds. The lime is very pure, containing 99 to 99.5 per cent. of calcium oxide, and costing about 18s. per 2,204 pounds.

Each furnace will take 500 horse-power (6,000 amperes at 57 volts). They are probably the largest used for the manufacture of calcium carbide.

The furnace is a large cylindrical crucible 59 inches in diameter and 32 inches high. The electrode, which is plunged into this cylinder, is made of compressed carbon in six pieces, each 60 inches long, 5.2 x 9.2 inches in section. The weight of the six carbons is over 858 pounds and the total section is 287 square inches. The crucible is fed from above by iron chutes.

It is difficult to arrive at the exact cost of production in this new works, but the following will be approximately correct:

	£	s.	d.
2,204 pounds CaO (lime).....	18	0	
1,980 „ C (coke).....	1	17	6
Electric current.....	1	13	0
Grinding, mixing, electrodes and manual labour	2	1	6

Total..... £6 10 0

The daily production will be six tons, but this can easily be increased. As this works seems to have been established under the most favourable conditions as regards power and installation, and proposes to turn out a first-class product only, its development and that of the trade it supplies will be followed with much interest.

THE ESTIMATION OF PHOSPHORUS IN STEEL.

By R. W. MAHON.

MANY analysts regard the titration of ammonium phosphomolybdate by standard alkali and acid with phenol phthalein as indicator as the best method for the routine determination of phosphorus in steel.

By two modifications of one of the approved processes for obtaining phosphorus in steel as ammonium phosphomolybdate, I have so shortened the operations as to enable one to execute the analysis in eight minutes, from receiving the drillings to obtaining the result. The results are accurate in the absence of arsenic. I have not experimented with the process in the presence of arsenic. No experiments have been made with steels containing silicon or carbon in considerable quantity. The process was devised for facile determination of phosphorus in steel containing scarcely any silicon, and low in carbon. It appears entirely probable that with high carbon and silicon, perfectly accurate results would be obtained. The two modifications I have to suggest are (1) effecting the partial neutralisation in a different manner, and (2) precipitating at a higher temperature. Before the steel drillings are received, the following preparations for the analysis are made: Seventy cc. of water, and thirty cc. of nitric acid (sp. gr. 1.4) are poured into a sixteen-ounce Erlenmeyer flask, a measured quantity of standard caustic potash solution and a little water are poured into a small beaker, the reading of the acid burette is recorded, and the filter is placed in its funnel, at the suction pump, ready for use.

Four grams of drillings are placed in the flask containing the acid, and this immediately placed over the gas. As soon as dissolved, add three cc. of a standard solution of potassium permanganate, and boil until no longer pink. Add ten cc. of hydrochloric acid (sp. gr. 1.20), boil until clear, remove from gas, wait for a few seconds until the boiling has nearly ceased, and then add a mixture of fifty cc. of molybdate solution and ten cc. to fifteen cc. of ammonia (sp. gr. 0.90), made ready just before use. Pour into the middle of the flask, not down the side. Twirl the flask in both directions, successively, without delay. Shake the open flask for about one quarter of a minute. Filter and wash with cold water. Place the paper and precipitate in the beaker, containing an excess of caustic potash solution, add phenol phthalein, and determine the excess of caustic by the standard acid.

The two standard solutions are of the customary strength; the

molybdate solution is made according to the following formula: 100 grams of molybdic acid are dissolved in a mixture of 200 cc. of ammonia (sp. gr. 0.90) and 200 cc. of water, and the solution filtered into 1,250 cc. of nitric acid (sp. gr. 1.20), blowing air through the mixture. Fifteen cc. of ammonia (sp. gr. 0.90) will neutralize fifty cc. of this solution, hence the amount of ammonia recommended in making up the mixture for use in an analysis. Ten to fifteen cc. of ammonia can be added, and if the mixture is kept cool during mixing no separation of molybdic acid will occur for some undetermined, but considerable time. This cold mixture can be satisfactorily used. It is, however, unnecessary to take the precaution of cooling during the mixing of molybdate solution and ammonia, if the mixture is used as directed. It is to be noted here that the graduated or other vessel used for mixing should invariably be rinsed before being used for a second quantity, as neglect of this sometimes causes separation of molybdic acid. The object of adding the mixture by pouring it into the middle of the solution and at once shaking the flask is to prevent separation of molybdic acid. This is the more elegant way of working, but is not indispensable, as the molybdic acid precipitated by very solid addition of the mixture, not poured accurately into the centre, at once goes into solution again, when the prescribed course of manipulation is followed.

The temperature of the solution at the moment of addition of molybdate is about 105°C. The temperature of the mixture added is about 60°C. The amount of free acid before the molybdate is added, is such that eighteen to twenty cc. of ammonia (sp. gr. 0.90) would, if added, produce a decided precipitate. A standard steel in which phosphorus had been determined many times with elaborate care by the molybdate-magnesia method, as 0.108, was used to make two series of estimations, titrating ammonia phosphomolybdate by standard caustic solution, one (A) with the older method of precipitating—that is adding ammonia in excess to the cooled solution of the steel, acidifying with nitric acid, and bring to 75°C. before adding molybdate solution; the other (B) with the method of precipitating described above—that is mixing molybdate solution and ammonia, in definite quantities, and precipitating a few seconds after removal from lamp.

Four estimations varying from 0.107 to 0.110.

(A).

0.108

0.107

0.110

0.107

Mean, 0.108

Twelve estimations varying from 0.108 to 0.111.

(B).

0.108

0.111

0.109

0.111

0.109

0.109

0.110

0.109

0.110

0.109

0.109

0.111

Mean, 0.110

In the series (B) above, the determinations were made to study the value of this method of precipitation, not to prove the time needed, a number of the estimations having been made simultaneously; consequently the filtration was only made immediately in some of the number.

In the following the time needed was the principal object of study, and each filtration was made a few seconds after adding molybdate:

Time consumed in analysis.

Phosphorus.

Per cent.

Eleven minutes 0.108

Ten minutes 0.107

Eight and a half minutes 0.107

I have also carried out one, adding the potassium permanganate before the last few particles of steel had dissolved, and only boiling until the pink colour nearly disappeared.

Time consumed in analysis.

Phosphorus.

Per cent.

Seven minutes 0.109

Although successful here, the last procedure might fail with high carbon steel. All of the foregoing filtrates remained perfectly clear. The quantity of ammonia recommended is a vital point.

ESTIMATIONS BY METHOD B VARYING *THE QUANTITY OF AMMONIA,

Phosphorus.

Per cent.

Five cc. of ammonia 0.096

Twenty cc. of ammonia 0.113

ESTIMATION BY METHOD B WITH VARIATION IN THE TEMPERATURE OF PRECIPITATION.

75°C., 0.110 per cent. phosphorus filtered in one minute.

65°C., 0.103 „ „ „ „ „ hour.

35°C., 0.108 „ „ „ „ „ twenty-four hours.

This method of working is now in daily use, having been repeatedly checked by the older style, invariably with entire satisfaction. Used as a rapid method and with the details of manipulation described, the results are identical with those by (A). My principal use of it has been simply to lessen the number of operations needed; used in this way the drillings are placed in an empty flask, and the acid and water poured upon them; the filtration not necessarily being made after a fraction of one minute, nor with the suction-pump at all, but with the use of funnel and platinum cone, and filtering after the lapse of an indefinite time varying from a few minutes to hours. Used thus, the results are 0.002 per cent. phosphorus higher.

The caustic solution is empirically standardised in these experiments by precipitates made in the older way (A); hence these appear as correct, and those by (B) as 0.002 per cent. phosphorous higher. Were (B) precipitates used in standardisation the record would make the results by (B) appear as correct, while those by (A) would average 0.106.—*four. Am. Chem. Soc.*

AGRICULTURAL EDUCATION IN FRANCE.

ACCORDING to a report prepared by Mr. Austin Lee, commercial attaché to the British Embassy in Paris, the farming interest in France, as well as in Great Britain, is in a critical condition. Agricultural questions have largely occupied public attention of late in France, and at one of the many sittings of the Chamber of Deputies which have been devoted to their consideration M. Méline, President of the Council and Minister of Agriculture said there could be no doubt that agriculture was suffering from the progressive and continuous fall in the prices of produce during the last fifteen years. The suggested remedy that he favoured was bimetalism; but M. Méline added that this was an international question, which could not be discussed at present. Meanwhile he admitted that one of the greatest services that could be rendered would be a revision of the present financial system, under which, he said, land bore far more than its fair share of taxation. Mr. Lee points to the importance of improved agricultural education as a factor in the solution of the problem, and states that within the last few years education of this technical nature has been systematised and extended to all classes of the population engaged in agriculture.

EDUCATIONAL INSTITUTIONS.

Among the various institutions carrying on this educational work are the Agronomic Institute in Paris (which gives the highest scientific instruction), fourteen schools belonging to the State, more than forty schools of practical agriculture to which the State contributes the funds necessary for the teaching, and 36 apprentice schools for the humbler classes, in which the instruction is entirely practical, and is paid for by the State. Instruction in agriculture was made compulsory in all training schools for teachers by a law passed in 1879, and the teaching of agriculture became compulsory in the primary schools of rural communes in 1882. Agricultural education is given also by 90 occupants of departmental "chairs of agriculture" organised by the State, and by 116 professors of agriculture, who give courses of lectures on Sundays during the summer and in the evenings in winter. There are also 78 establishments for agricultural research, and nearly every department possesses fields for experiments and demonstrations, the expenses being borne by the State and the department jointly. Mr. Lee remarks that with the ample facilities thus afforded to all classes of the rural population to receive a professional education, with the improved culture of the soil, and with the large increase in the use of fertilisers, it is not surprising that agricultural production in France has increased largely. How important this education is to the agricultural interest may be gathered from the fact that the value of agricultural land in France is £3,200,000,000, whilst the working capital is £340,000,000, and the total number of the population living by agriculture is estimated at 18,250,000 souls, or about half of the total population.

CONSUMPTION OF FERTILISERS.

The increased use of fertilisers is shown by the following figures of the quantities carried by the principal railways:—1885, 1,861,688 tons; 1891, 3,917,310 tons; 1892, 4,205,638 tons; 1893, 4,910,799 tons. This is equal to an increase of 164 per cent. in nine years. In 1896 nearly 20 per cent. of the traffic on the French canals was in agricultural products and fertilisers.

Dealing with the various panacea which have been suggested for the relief of the French agriculturist, whose position is admitted by general consent to be but little better than that of the English farmer, the report mentions proposals to reduce the taxes on land by a million pounds, the foundation of agricultural banks, and the increase of facilities for borrowing at reasonable rates on the security of crops which cannot be realised at once. The Minister of Commerce has recently held out hopes of a further benefit to agriculturists by creating a system of insurances against the various misfortunes and disasters from which the farmer is so often a heavy sufferer.

Legal Intelligence.

HIGH COURT OF JUSTICE.

QUEEN'S BENCH DIVISION.

Before Mr. Justice Wright and Mr. Justice Kennedy.

THE QUEEN v. NORTHWICH SALT COMPENSATION BOARD (EX PARTE SALT UNION, LIMITED).

This was the argument on a rule nisi for a *certiorari* to quash certain proceedings of the Northwich Salt Compensation Board purporting to be taken under the 23rd section of the Brine Pumping (Compensation for Subsidence) Act, 1891, and also to quash a certain rate purporting to be made by the said board pursuant to section 36 (1) of the said Act on the 25th of March, 1897, on the ground that the said rate was made without authority, being before the claims mentioned in the 36th section had been adjudicated on, and being in excess of 3d. per 1,000 gallons raised.

Mr. Marshall, Q.C., and Mr. Honoratus Lloyd showed cause against the rule; Mr. Freeman, Q.C., and Mr. Wilbraham appeared in support.

The Act in question of 1891 and another in 1896 provided for the creation of a Compensation Board with powers to levy rates on the brine pumpers in the district, out of which rates compensation was to be paid to those suffering from subsidence of the land caused by brine pumping. After the passing of the Act of 1891, and before the establishment of the board under the Act of 1896, certain notices of alleged damage were given in writing to the sanitary authorities, and after the establishment of the board, certain notices of damage were given to the board in accordance with section 23 (1) of the Act of 1891. The board was appointed under the Act of 1896, and consists of three members appointed by the county council, three appointed by the brine pumpers in the district, and three appointed by the District Council of Northwich. To this board 194 claims were sent in on March 6th, 1897, and subsequently the board, in accordance with section 36 (1) of the Act of 1891, estimated the sums required to be levied in order to pay the claims. In assessing the rate required to make this up, the Board made their calculations on certain returns as to the amount of brine pumped during the year ending December 31st, 1896, sent in by the brine pumpers. The Board fixed the rate at the maximum amount allowed—namely, 3d. per 1,000 gallons of brine pumped. It should be observed that the returns sent in in fact set out the number of tons of salt manufactured, and not the number of gallons of brine pumped up. The Board computed that 1,000 gallons of brine were consumed in the production of one ton; that, therefore, to ascertain the number of gallons pumped, the tons produced ought to be multiplied by 1,000. The Salt Union had appealed to quarter sessions against the computation, and alleged there that 725 gallons only were consumed in making a ton of salt, but the quarter sessions upheld the computation of the Compensation Board. The rate in question was made in respect of the 12 months ending March 31st, 1896, and the Board have no intention of making any further rate in respect of that period. The claims sent in have been inquired into, but not adjudicated on at present, except that on April 7th, 1897, the Board disallowed some of them under sections 23 (2) and 24 of the Act of 1891. They have also provisionally ascertained the amount at which certain other claims may hereafter be allowed in the event of the claimants proving their interest in the damaged lands.

The court discharged the rule.

Mr. Justice Wright said that an objection had been raised as to the mode in which the returns had been obtained from the pumpers of brine, but that did not vitiate the rate, though it was based upon the returns. A second objection was that the rate was bad because it was to be levied to give compensation for injuries accruing before the birth of the Board. That, however, made no difference. The third objection was that the rate was retrospective. It was, however, the object of the Act, as shown by sections 22 and 23, that this should be so. Those were the three points relied on for the Salt Union. He would also add this, that in his opinion the rate might be made before the claims had been actually adjudicated on.

Mr. Justice Kennedy concurred. It would be quite contrary to the intention of the Act to say that the Board was to wait twelve months before assessing the damages.

EXPLOSION AT A POWDER MILL.—About 9.30 on Saturday morning last three alarming explosions occurred at Worsborough Dale Gunpowder Works, near Barnsley, which belong to Messrs. Kynoch and Co., of Birmingham. It seems that the five grinding mills, at the time of the explosion, were damped down for the purpose of cleaning. Whilst this was going on one mill exploded, and ignited the other four. The damage was not so great as it would have been if the works had been in full swing. William Allen, who had charge of the mill, was severely burned, and has succumbed to his injuries.

Selected Correspondence.

THE PETROLEUM AND LAMP TRADE.

To the Editor of the Birmingham Daily Post.

SIR,—Referring to the remarks of your London correspondent contained in your issue of Saturday, the 23rd inst., upon the attitude of the lamp trade in relation to the present flashing-point of oil, I think he is hardly justified in the conclusion at which he has arrived—that the lamp manufacturers have but fitfully bestirred themselves, and have not thrown the energy into the inquiry that might have been anticipated. The members of the Lamp-trade Association have from the first been fully alive to the importance of the question, and have done all that they could honourably do to bring before the Select Committee of the House of Commons the real facts of the case. It is quite true that my association has not spent enormous sums of money in procuring evidence; we have been content to present facts, and to rely upon the common sense of the Committee and of the public to recognise that, to use the words of the suggestions laid before the Committee, "the flashing-point of oil in use for domestic purposes, particularly in the houses of the poorer classes, should be a point to which the temperature of the oil while burning in the lamp is never likely to rise under ordinary circumstances." We do not hesitate to say that—whether it results in a serious increase in the price of oil or not—it is imperatively necessary that an increase in the flashing point to at least 100 degrees should be made in the interests of the public. The members of my association are quite prepared to make any alteration in the construction of lamps which wisdom and common sense show to be advisable or necessary; but no lamp, however it may be made, can be safe under all circumstances with a low-flash oil. The carefully-prepared suggestions which my association has handed to the Committee, together with the large amount of evidence which we have caused to be tendered to the Committee, by means of unpaid witnesses, drawn from all parts of the country, is, I think, sufficient proof of our alertness, and also of the disinterested and public-spirited way in which the question has been dealt with by the members of the lamp trade generally. The relative importance of the evidence tendered by the lamp trade and the oil trade may be measured by considering the different aims of the two bodies. The lamp trade simply desire to restore confidence in oil lamps as a method of lighting, and in oil stoves as a method of cooking and eating. The American oil companies, on the other hand, are endeavouring to keep open at all costs a market which has for years proved a valuable dumping-ground for their low-flash oil, the use of which is to so large an extent prohibited in the United States.

T. GILBERT GRIFFITHS, Secretary.

Birmingham, October 29th.

END OF THE ELLIOTT SMOKE PREVENTER.

AN application was recently made to Mr. Registrar Giffard, sitting at the London Bankruptcy Court, for an order of discharge on behalf of Samuel Elliott, who combined the trade of a builder with the development and exploiting of patent inventions for the annihilation of smoke and fumes. The Official Receiver reported that out of a total indebtedness of £140,000, proofs had been admitted by the trustees to the amount of £117,531, whilst the assets, valued at £8,552, had only realised £3,738. The bankrupt had formerly made an annual profit of £2,000 out of the wood business, but after he devoted his time and energy to the smoke patents, that profit dwindled down to £300, or £400 a year. He attributed his failure to loss in connection with those patents to which three-fourths of his liabilities related, and in connection with which he had expended about £40,000 during the past five or six years. In order to provide the money required for the development of the patents, the bankrupt raised money upon accommodation bills, some of which he got accepted by paying to a clerk in receipt of a weekly salary of 30s., a fee of 5s. for each acceptance. As an instance of the financial straits to which the bankrupt was reduced, the Official Receiver pointed out that during the last five or six years the bankrupt had been served with 750 or 800 writs, in respect of which some 500 executions had been levied on his effects, and he had been put to a yearly expense of £1,000. He had, however, denied all knowledge of insolvency, and had always regarded the patents as being of sufficient value to get him out of his difficulties. Several offences were alleged by the Official Receiver. Mr. Webb, who appeared on the bankrupt's behalf, submitted that his client had every reason to regard his patent as a valuable property, seeing that the machinery had been erected and tried with great success on the Embankment, also at Newbury, Birmingham, and various other places. The learned Registrar agreed that the smoke patents and inventions constituted a valuable property. He was of opinion, however, that the bankrupt must have known he could not pay his way, seeing that during the past five or six years he

was served with 780 writs, and 500 executions had been levied on his effects. The fact that he had paid a 5s. fee to a clerk at 190 different times for the use of his name further emphasised the insolvency. It was clear that the bankrupt went on trading recklessly with borrowed money in the hope that his patent would turn out a success; and that he had resorted to expedients which were rightly described as misconduct. All the main charges had been proved, and the discharge would have to be suspended for a further period of four years. Order entered accordingly.

Reports of Companies.

LIVERPOOL NITRATE COMPANY, LD.

THE directors' report for the year ended June 30th, 1897, states that the profit and loss account shows a balance of £2,219. Adding balance of profit and loss from previous account, £44,304, less amount of claim against the Chilean Government, written off as irrecoverable, £5,777, there is a total of £40,746. Dividends have been paid in November, 1896, and May, 1897, and the directors propose to pay a dividend on November 15, of 5 per cent. (being at the rate of 15 per cent. for the year), carrying forward a balance of £13,246. The unsatisfactory results for the year are due to the Oficina having worked only five months, to the restriction of output under the combination, and to the heavy expenses incurred during the stoppage.

COLORADO NITRATE COMPANY, LD.

The directors' report for the 12 months ended June 30th, 1897, states that the profit and loss account shows a balance of £6,545. After providing for depreciation account and adding balance of profit and loss from previous account, less amount of claim against the Chilean Government, written off as irrecoverable, there is a total of £12,249, which the directors propose to carry forward to next account, being unable to recommend the payment of a dividend out of profits made, in view of the unpromising outlook for the nitrate industry. As there was no immediate prospect of improvement, the directors sent instructions at the beginning of last month to close down the Oficina entirely, and the works will remain closed until there is a reasonable increase in the selling price of nitrate.

Trade Notes.

NEW BORAX WORKS AT BROOKLYN.—The Pacific Coast Borax Company, better known in this country in its connection with the Pacific Borax and Redwood's Chemical Works, Ltd., have started their new factory in Brooklyn. They are now making deliveries.

MORECAMBE PIER.—Last week the first pile was driven in the new Morecambe Pier, the ceremony being performed by Mr. Alderman Spencer, Halifax, chairman of the directors. The Widnes Iron Foundry Company, who are making a speciality of this kind of work, are the contractors. The work is expected to be finished by next Easter, and operations are now in full swing.

MESSRS. KELLNER-PARTINGTON'S DIVIDEND.—At a meeting of the directors of the Kellner-Partington Paper Pulp Company, Ltd., on Tuesday, it was proposed to recommend to the shareholders a dividend for the half-year ending September 30 last of 7½ per cent., free of income tax, making, with the interim dividend paid in May last, a total dividend for the year at the rate of 12½ per cent.

PEARS' SOAP OVER CAPITALISED.—At the Pears' Soap Company meeting last week the Chairman said that there could be no doubt now that the Company were over capitalised, and he did not see at present any way out of the difficulty. A large financial house in the city had recently put forward suggestions to the Board. If those assumed more explicit form it would be necessary for him to again call the shareholders together and take their opinion.

INSANITARY FILTERS.—A meeting of the City Commission of Sewers was held on Tuesday at the Guildhall, Mr. H. G. Smallman, the chairman, presiding. Dr. Sedgwick Saunders, the medical officer of health, reported the case of a large establishment in the City where the filtered water was not of the same chemical purity as that drawn from the main, and said filters of ordinary manufacture were not only useless but objectionable.

A PETROLEUM SAILING FLEET.—From New York comes the intelligence that the Standard Oil Company is reported to have decided on a new departure in the ocean transport of petroleum. Hitherto its exports have been shipped abroad in the well-known tank steamers, but now, it seems, a start is to be made in acquiring a great sailing fleet which will be used in carrying the company's oil to the East. The first purchase is a large Mersey iron-built ship, the *Kentmere*, owned in London. It is asserted that greater safety and easier insurance rates are the motives for taking to the older and slower mode of navigation.

ELECTRICAL COPPER.—The Electrical Copper Company announce that a portion of the works established by them at Widnes to prove the commercial value of the patent owned by the company has been put into successful operation.

RESIGNATION OF THE MANCHESTER RIVERS COMMITTEE.—The Rivers Committee of the Manchester Corporation held a meeting on Tuesday, Mr. Ald. Thompson being in the chair. The principal business was the consideration of the ratepayers' decision against the culvert scheme as a solution of the sewage disposal difficulty. A resolution was moved by Dr. O'Doherty, seconded by Mr. Alderman Reade, and carried:—"That the Rivers Committee as a body do tender their resignation to the City Council." There was some discussion, but the feeling in favour of resigning was almost unanimous. Only one vote was given against the resolution. It was observed that though the committee had the confidence of the Council, the poll of the ratepayers seemed to indicate that they had not that of the citizens as a body, and the only thing to do in the circumstances was to retire. The fact was that although the citizens had given a decisive vote against the scheme the Council approved of it by 71 votes to three was commented upon. It was felt that the responsibility of saying what is now to be done should be left with the newly-elected Council.

RUSSIAN PETROLEUM, LTD.—The Russian Petroleum and Liquid Fuel Company, Limited, with a share capital of £1,200,000. in 60,000 six-and-a-half per cent. cumulative preference and 60,000 ordinary shares of £10. each has been formed to purchase as a going concern and to further develop the petroleum property in the Bibi-Eibat Oil-field at Baku, and other petroleum properties and businesses there and elsewhere, owned by Mr. Tagieff in Southern Russia. The plant and premises to be acquired include storage establishments at the principal distributing points of the petroleum industry in Russia, namely, Baku, Astrakhan, Tzaritzin, Batoum, and Moscow, together with tank-steamer, tugs, and barges, a petroleum refinery at Bibi-Eibat, and a soda factory at Baku. The company also acquires additional oil lands at Khirdalan and at Digiah, in the Baku district. The vendors have fixed the purchase price for all the properties at the sum of £900,000, payable as follows: £735,000. in cash and £165,000. in fully paid preference and ordinary shares, in such proportions as the company may decide. The present issue is of £1,000,000.—50,000 preference and 50,000 ordinary shares—of which the vendors will take £165,000. in preference and ordinary shares, and the directors and their friends have subscribed £308,000.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols are quiet at 1s. 11d. for 90's and 2s. 1d. for 50/90's. Carbolic acids are quiet, but prices are firm, and quotation for crude carbolic is 2s., crystals remaining at 6½d. Solvent naphtha firmer at 1s. 8d., while crude may be quoted at 10d. Pitch steadier at 20s. f.o.b. East Coast. Other products are without appreciable change.

Sulphate of ammonia is active, and the October closing values are maintained. There is fairly well doing in forward at £8. 10s., Beckton, Nov.-March. Closing prompt prices are:—London outside makes, £8. 7s. 6d.; Liverpool, £8. 7s. 6d. to £8. 10s.; Hull, £8. 6s. 3d.; and Leith, £8. 6s. 3d. Nitrate of soda firmer.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade, business is tolerably brisk, but prices have a lower tendency. The chief feature of the week is the considerable reduction in forward quotation of bleaching powder, business having been done for 1898 at £5. 5s., f.o.r. This extreme reduction of price is looked upon as only likely to be temporary. Caustic soda is also weaker, but without change for spot delivery, prices being nominally f.o.b. Liverpool, as follows:—77%, £8. 10s.; 74%, £8. 2s. 6d.; 70%, £7. 7s. 6d.; 60%, £6. 7s. 6d., nett, 10 ton lots. For forward contracts, however, lower prices are accepted. Chlorates still have a downward tendency. Potash offering at 3½d. Soda, 4¼d. to 4¾d. per lb. Sulphate of copper is again weaker, both prompt and forward delivery being quoted at £16. to £15. 5s. f.o.b. Sulphur steady at £4. 12s. 6d. For salt-cake there is better inquiry, and more business doing at 19s. to 20s. f.o.r. Vitriol and muriatic acids are without change in value. White powdered arsenic is a firm market at £21. 15s. to £22. for best brands. Brown acetate of lime dearer, at £5. 10s., c.i.f. Grey acetate, £7. 15s. to £8. Acetate of soda still depressed at £10. 10s. c.i.f. Other acetates quiet, and prices unchanged. Bichromate of potash rather easier. Potash caustic and carbonate are still inclined to droop in price, but a fair amount of business is now being done for forward delivery. Permanganate, 65s. to 70s. per cwt. Yellow prussiate firmer, at 6d. Cyanide, 98/100%, 1s. 1d. per lb.

REPORT ON MANURE MATERIAL.

There has been more activity in the market all round, and in mineral phosphates a slight improvement in values. For high grade rock there are large buyers for the North Sea ports at 6d. per unit, which price has been refused. For good United Kingdom ports sellers are asking 6d. per unit, and it is doubtful whether ¼d. less than this would now be accepted, 1898 shipment. There is also improvement in the lower grades, and 5½d. per unit is now asked for South Carolina River rock, though it is likely that something less would be accepted for next year's shipment. The value of similar grade Algerian rock is about 5¼d. per unit. There is more inquiry for East Indian bone meal, and £3. 16s. 3d. per ton, November-December steamer shipment, has been repeatedly bid and refused. £3. 17s. 6d. per ton would still be cabled out with prospect of business. Nitrate of soda is quiet on spot at 7s. 4½d. for good up to 7s. 6d. per cwt. for fine quality. Owing to the shutting down of some of the weaker officinas and to the difficulty of obtaining tonnage, the market is decidedly firmer in the forward position, though buyers do not seem in any hurry to cover their requirements.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil quiet. Lagos, £19. 15s. quay, and £20. transit. Olive firm, with a fair business passing. Linseed is quoted 16s. to 16s. 6d. per cwt. for Liverpool makes in export casks. Cottonseed quiet: Liverpool refined, 15s. to 16s. per cwt. Castor oil in better demand at 31½d. to 3¼d. for good seconds Calcutta, and 31½d. to 3¼d. for first pressure French. Resin steady and unchanged. Spirits of turpentine quiet but steady at 24s. on spot. Petroleum dull at 5¾d. to 7d. for American, and 5d. per gallon for Russian refined.

CAKES.—A firm tone has prevailed for linseed during the week, and holders of the small supplies of American Western on the spot have experienced a continued good demand, the quotation being now £6. 11s. 3d. to £6. 15s.; Liverpool makes have also improved, and though there has been fair inquiry, business has been somewhat interfered with by the higher rates, viz., £7. 12s. 6d. to £8. 10s. per ton. American decorticated cottonseed quiet, but for the better brands there is a continued good inquiry at £5. 12s. 6d. to £6. 5s. Liverpool makes in buyers' favour, decorticated being now quoted at £6. 5s. to £6. 10s., and undecorticated at £4. to £4. 5s. per ton, with a moderate business doing thereat. Egyptians on the spot remain very firm at £3. 17s. 6d. per ton, with a better inquiry.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire—common £10., medium £12., best £15.; Derbyshire—common 40s., medium 50s., best 60s.; Welsh—best 90s., seconds 50s., and common 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead: £16. Red lead unchanged. Venetian red: £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide: £22. 10s. to £25.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The month opens with a dull market, prices having a tendency to recede; yet crushers and oil refiners are fairly busy with month contracted oils. The stocks of seed in Hull ending last month, as against the previous month, are:—Linseed, 14,942 quarters, against 15,414 quarters; rapeseed, 83 quarters, against *nil*; cottonseed, 1,181 tons, against 1,181 tons. The imports of seed into Hull during the month have been:—Linseed, 91,108 quarters, against 54,421 quarters last month; rapeseed, 11,910 quarters, against 295 quarters; cottonseed, 17,805 tons, against 10,494 tons. Linseed oil is quiet, with sellers at 13s. 10½d., spot naked; forward, November-December, 14s., January-April, 14s. 7½d. naked. Boiled and refined, £1. to £1. 10s. per ton extra. Refined cotton oil: For filtered qualities the demand is very good, but for ordinary refined oil the demand is quieter, the spot quotation being 12s. 10½d., the same being the present quotation for delivery to end of April. Filtered qualities, £1. to £1. 5s. per ton extra; barrels £1. 10s. and ordinary casks £1. per ton extra. Turpentine, 24s. Castor oil from 3¾d. for second quality. Cod oils, £16. to £18. per ton. Olive oil maintains its value, with a quiet demand. Olive oil soap (Italian), £16. per ton, c.i.f. Hull. Oleums unchanged. Stockholm tar, scarce and firm. The demand for lubricating oils is much affected by the engineers' strike.

CAKES.—The present open weather affects adversely the demand for feeding stuffs. Linseed cakes firm, but demand quiet: 95%, pure, £7. 12s. 6d. to £7. 15s. Oilcakes, £6. 12s. 6d. to £6. 15s.; Russians, £7. 2s. 6d.; Americans, to arrive, £6. 15s. Cotton cakes steady.

best makes, £4. 1s. 3d. spot, to £4. 2s. 6d.; and £3 18s. 9d. to £4. December-April; seconds, 2s. 6d. per ton less Rape cakes, none offering.

PAINTS.—The demand fair for time of year, and prices unaltered.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Sulphate of ammonia has kept hold of its betterment very well indeed all through the week, and at the moment of writing is perhaps the shade stronger still. The estimate is £8. 5s. to £8. 7s. 6d. prompt, Leith. Some buyers had been hoping that the close of October, with the obligations of that period of the month all met, would show the article once more on the losing side, but up till to-day at least there is no sign of that. Forward business during the week has been very quiet, almost a blank. Nitrate of soda is rather firmer than it was. In the general chemicals market there is a steady feeling, with a fair inquiry for consumption. About the only changing line is that of sulphate of copper, which is down another fraction. Burning oils are now in large deliveries, ex contracts, at the old prices. Gas-making oils are also more in demand at 2½d. to 3d. per gallon.

Chief prices current are:—Soda crystals, £2. 12s. 6d. to £2. 17s. 6d. nett, Tyne, soda ash, 48/62°, £4. 2s. 6d. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £4. 17s. 6d. to £5. 7s. 6d. nett, Glasgow; caustic soda, white, 74° £8. 2s. 6d., 70/72° £7. 7s. 6d., 60/62° £6. 7s. 6d., cream 60/62° £6. 2s. 6d. all nett, Liverpool; bleaching powder, 35/37°, £6. 5s. nett, Tyne; saltcake, 19s.; borax, English, refined, £15., and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 3¾d. less 5%, any port; nitrate of soda, 7s. 4½d. to 7s. 7½d.; sulphate of ammonia, £8. 5s. to £8. 7s. 6d. prompt, f.o.b. Leith; sal ammoniac, first and second white, £33. and £31. nett any port; sulphate of copper, £16. 7s. 6d. less 5% Liverpool; paraffin scale, hard, 1½d. to 1¾d. per lb., soft, 1½d. per lb.; paraffin wax, 120° semi-refined, 1¾d. to 2d. per lb.; paraffin spirit (naphtha), 6½d. to 7d. per gallon; paraffin oil (burning), No. 1, 5½d., and crystal, 6d., at Glasgow and other big centres, for Scotch buyers (English sales a shade lower); ditto (lubricating) 86° £4. 15s. to £5. 5s., 88° £5. 15s. to £6. 5s., and 89/89½° £6. 10s. to £7. Week's imports of sugar at Greenock were 2,000 bags beet refined and 2,700 bags beet unrefined.

TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals continue in fairly good demand, and shipments recently have been quite up to the average. Soda crystals are quoted at £2. 12s. 6d. per ton, gross weight, locally. Caustic 70%, £7. 10s.; 76/77% £9. per ton. Sulphur £5. per ton and scarce.

Bleaching powder, softs, £6. 5s. per ton, nett; hards, £6. 10s. per ton, nett; caustic soda, 76/77% £9. and 70% £7. 10s., per ton; recovered sulphur, 2 cwt. bags, £5. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. 6d. per ton, nett; do., 52%, £4. 15s. per ton, nett; alkali, 30%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb.,

less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95% crude calcined, £6. per ton nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham salt firm at 9s. per ton, f.o.b. Tees.

COALS.—Trade is rather quieter, and with the closing of many Baltic ports, shipments are falling off. Gas coals are in good demand. Coke is also in large consumption and for forward supplies higher prices are asked. Best Northumbrian steam, 8s. 6d. to 8s. 9d. per ton; second qualities, 7s. 6d. to 7s. 9d. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; gas coals 7s. 9d. to 8s. 3d. per ton; bunker coals 7s. 6d. to 8s. per ton; coke, 19s. 6d. to 21s. per ton.

New Companies.

Worcester Leather Co., Ltd.—CAPITAL £10,000., in £1. shares. This company has been formed to carry on the business of tanners, leather dressers and manufacturers, leather, hide and wool merchants, factors, and brokers, furriers, skimmers, fellmongers, wool staplers, etc. The subscribers to the memorandum of association are:—A. Bailey, 2, Edgbaston-street, Birmingham, manufacturer; J. Hatherill, 40-41, Lower Essex-street, Birmingham, manufacturer; T. B. Stokes, The Elms, Cannock, C.A.; C. Duke, 10, Gladstone-road, Sparkbrook, cashier; J. F. Edwards, 22, Oldfield-road, Balsall-heath, Birmingham, C.A.; W. C. Dornon, 2, Beaconsfield-road, Balsall-heath, Birmingham, clerk; W. E. Fowkes, 83, Colmore-row, Birmingham, C.A.

Richardson's Chemical Manure Co., Ltd.—CAPITAL £50,000. in £5. shares. This company has been formed to acquire as a going concern, the manure, guano, and feeding stuff business of Richardsons Bros. & Co., Belfast; together with the works, trade marks, interest in lease, grant, and goodwill. The subscribers to the memorandum of association are:—J. Richardson, 30, Donegall-place, Belfast, merchant; W. H. Dixon, 30, Donegall-place, Belfast, merchant; J. T. Richardson, 30, Donegall-place, Belfast, merchant; G. F. Richardson, 30, Donegall-place, Belfast, merchant; J. R. Richardson, 30, Donegall-place, Belfast, merchant; W. J. Richardson, 47, Rosemary-street, Belfast, stockbroker; J. H. Richardson, Lissui, Lisburn, gentleman. Registered office, 30, Donegall-place, Belfast.

Craigpark Co., Ltd.—CAPITAL £30,000., in £1. shares. This company has been formed to carry on the business of manufacturers and dealers in cables (electric, insulating, or otherwise), and of all gutta-percha and rubber goods connected with telegraphic and electric enterprises. The subscribers to the memorandum of association are:—W. Dick, 13, Exchange-place, Glasgow, merchant; P. Primrose, 16, St. Enoch-square, Glasgow, merchant; W. Brown, 41, Oswald-street, Glasgow, manufacturer; A. MacLean, 26, Princes-square, Glasgow, merchant; J. Kellock, 26, Renfield-street, Glasgow, C.A.; C. Hamilton, 247, St. Vincent-street, Glasgow, engineer; C. MacLean, 115, St. Vincent-street, Glasgow, writer. Registered office, Craigpark works, Townmill-road, Glasgow.

Shotts Iron Co., Ltd.—CAPITAL £170,000., in £5 shares. This company has been formed to carry on the business of mining in Scotland, and of trading in minerals. The subscribers to the memorandum of association are:—J. Miller, Manderston, Berwick, baronet; J. Jordan, 17, Charlotte-square, Edinburgh, merchant; W. Murray, 48, Castle-street, Edinburgh, W.S.; J. Lawrie, 4, St. Andrew's-square, Edinburgh, sharebroker; D. Waldie, 25, Douglas-crescent, Edinburgh, coal merchant; T. Ker, 4, St. Andrew's-square, Edinburgh, stockbroker; J. Thomson, 28, Bernard-street, Leith, shipbroker.

IMPORTS OF CHEMICAL PRODUCTS

AT

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending October 23rd.

Acetic Acid —		
Holland,	70 pks.	F. J. Putz & Co.
"	90	Phillips & Graves
"	20	H. Wallace & Co.
"	125	Little & Johnston
Acetone —		
Austria,	19 drs.	A. & M. Zimmermann
Germany,	4 brls.	Matthews & Luff
Belgium,	14 cks.	R. D. Lyon
Austria,	17 drs.	R. W. Grett & Co.
Alkali —		
Belgium,	120 c.	J. Barber & Co.

France,	800	T. H. Hughes
"	60	J. Barber & Co.
Alumina Sulphate —		
Holland,	77 cks.	J. Owen
Ammonia —		
Holland,	12 brls.	Little & Johnston
Antimony Ore —		
France,	50 t.	Smith, Sundius & Co.
Arsenic —		
Portugal,	66 brls.	Coverley & Westray
Asbestos —		
Germany,	£18	Craven & Co.
Barytes —		
Holland,	89 cks.	I. & W. Farniloe, Ltd.

Belgium,	244	W. Harrison & Co'
"	95	406 bgs. J. L. Lyon & Co.
Holland,	19	E. J. Diggins
Bleaching Powder —		
Holland,	40 cks.	J. M. Steel & Co.
Belgium,	53	H. Wallace & Co.
Caoutchouc —		
Singapore,	172 c.	L. & I. D. Jt. Co.
Zanzibar,	24	Hale & Son
Germany,	62	T. H. Lee
"	4	Major & Field
Zanzibar,	40	S. Figgis & Co.
Germany,	17	W. M. Smith & Sons
Sydney,	14	McIlwraith & Co.
Natal,	19	Hale & Son

Penang,	483	E. Boustead & Co.
Zanzibar,	72	L. & I. D. Jt. Co.
E. Indies,	18	J. W. Cook & Co.
Singapore,	26	Elkan & Co.
Ceylon,	11	J. A. Hadden & Co.
France,	43	H. Johnson & Sons
Natal,	19	L. & I. D. Jt. Co.
"	15	Brooks & Green
Holland,	4	Brasch & Rothenstein
E. Indies,	9	Ralli Brs.
Carbolic Acid —		
Germany,	70 pks.	J. G. Back
Castor Oil —		
France,	6 brls.	City Coml. Wf.
E. Indies,	46 cks.	Co. Ld. Cayer, Irvine & Co.

France, 133	Mercantile Bros.	U. States, 200	1,000	Deering & Robottom	Sodium Acetate—	Germany, 3 cks.	F. Boehm
" 25	Anderson, Weber & Smith	Germany, 200	200	Trier, Meyer & Co.	France, 10	H. Wallace & Co.	
" 18 pks.	Riversford & Co.	Austria, 92	600	E. & T. Pink	Belgium, 44	H. Lorenz	
E. Indies, 43	F. Boehm	U. States, 500	500	Bellamy & Co.	Germany, 52 cks.	A. E. Neale	
France, 13 cks.	J. Owen	" 50	293	H. Johnson & Sons	Sodium Hypophosphate—	Holland, 16 cks.	H. Wallace & Co.
E. Indies, 150 cks.	C. S. Lovell	" 50	300	Page, Son & East	Sodium Phosphate—	Belgium, 49 cks.	A. Boake Roberts & Co.
Belgium, 12	W. M. Smith & Sons	" 4,150	5,451	R. G. Hall & Co.	Sodium Sulphate—	Belgium, 27 brls.	R. W. Greeff & Co.
Belgium, 12	R. G. Hall & Co.				Starch—	Belgium, 100 cs.	W. Balchin
Caustic Potash—	W. E. Cole				France, 81	Phillipps & Graves	
France, 26 drs.					Holland, 1,291	Little & Johnston	
Chemicals (otherwise undescribed)	L. & I. D. Jt. Co.				Belgium, 250	F. Claydon & Co.	
Germany, 1,100	W. Canbery & Co.				France, 249	Becker & Wagner	
Norway, 175	F. Boehm				Belgium, 90	W. E. Cole	
Holland, 45	Type & King				Holland, 95	Phillipps & Graves	
" 28	T. H. Lee				Belgium, 40	Taylor Brs.	
Belgium, 13	John Cockerill Line				France, 40	J. Barber & Co.	
Germany, 120	T. H. Lee				Holland, 20	Hernu, Peron, & Co.	
" 483	A. & M. Zimmermann				Belgium, 548	T. H. Lee	
France, 4	Prop. Hay & Wf.				" 576	E. & T. Pink	
U. States, 310	Lunham & Moore				Germany, 1,000	Horne & Co.	
Germany, 69	Riversford & Co.				" 6 cks.	T. H. Lee	
" 444	Phillipps & Graves				" 210 bgs.	R. Bennett & Co.	
Cream of Tartar—					Stearine—	France, 310 bgs.	G. Boor & Co.
Spain, 10 cks.	W. C. Bacon & Co.				Belgium, 125	H. Hill & Sons	
France, 11 brls.	J. W. Cook & Co.				Sulphur—	Italy, 500 t.	W. C. Bacon & Co.
" 10 cks.	W. C. Bacon & Co.				Tartaric Acid—	Belgium, 14 pks.	F. C. Devon & Co.
" 10	C. F. Gerhardt				France, 7	Fellows, Morton, & Co.	
" 18	H. & F. Wf. Co.				Holland, 4	F. C. Devon & Co.	
Holland, 2 pks. L. & N. W. Ry. Co.					" 4	B. & F. Wf. Co.	
" 2 pks. 100 kgs. Kirkpatrick & Co.					Italy, 4	H. Lorenz	
France, 4	Blackmore, Leconte & Co.				" 6	F. C. Devon & Co.	
Cryolite—					" 10	G. Boor & Co.	
Germany, 637	M. D. Co.				France, 2	F. C. Devon & Co.	
Dextrine—					Italy, 40	B. & F. Wf. Co.	
Germany, 100 bgs.	J. Barber & Co.				France, 16		
" 10	M. D. Co.				Ultramarine—	Holland, 6 pks.	J. Barber & Co.
" 31	Ohlenschlager Brs.				Belgium, 12 pks.	W. Harrison & Co.	
Dyestuffs—					Holland, 9 cs.	Phillipps & Graves	
Belgium, 20 pks.	W. Gerson & Co.				" 20 cks.	Thames S. T. & L. Co., Ltd.	
Italy, 513 bgs.	B. Jacob & Sons				" 9	W. Harrison & Co.	
Goethineal					Varnish—	Belgium, 1 pk.	W. Gerson & Co.
Canaries, 10 bgs.	L. & I. D. Jt. Co.				Holland, 6	Phillipps & Graves	
" 99	Sperling & Williams				U. States, 6	Dawson Brs.	
" 81	Hendrey & Martin				White Lead—	Holland, 3 cks.	J. Owen
Gutch					Belgium, 18	Perkins & Homer	
Singapore, 440 bxs.	J. Swire & Sons				" 35	J. L. Lyon & Co.	
" 100	Anderson, Weber & Smith				" 58	T. & W. Farmiloe, Ltd.	
" 300	Vokins & Co.				Holland, 40	A. & M. Zimmermann	
U. States, 200	L. & I. D. Jt. Co.				France, 18	Perkins & Homer	
Rangoon, 6 cs.	Ralli Brs.				Germany, 39	Wilkinson, Heywood, & Co.	
Extracts					" 30	Taylor Brs.	
Holland, 3 brls.	J. Barber & Co.				Norway, 11	R. W. Greeff & Co.	
Germany, 9 cs.	T. H. Lee				Holland, 61	Burrell & Co.	
Natal, 1	L. & I. D. Jt. Co.				France, 18	J. Watt & Son	
U. States, 1	Lunham & Moore				U. States, 127 cs.	F. V. Smythe & Co.	
France, 210 pks.	Bennett S. S. Co.				Wood Pulp—	Sweden, 400 bls.	Hummel & Co.
" 65 cks.	B. & F. Wf. Co.				" 507 pks.	H. Johnson & Sons	
U. States, 100 bxs.	Skillbeck Brs.				" 1,040	Henderson, Craig, & Co.	
France, 26 cs.	Innos Tannery Co.				Norway, 80	C. S. Lovell	
Canada, 120 cks. 150 brls.	Boucher, Mortimore & Co.				Holland, 54	E. J. & W. Goldsmith	
Gambler					Belgium, 1,496	" G. Becker	
Singapore, 934 bls. 146 bgs.	J. W. Cook & Co.				Canada, 5	H. Raby & Mather	
" 2,254	Adamson, Gilfillan & Co.				Sweden, 254 bls.	Christophersen, Andrews, & Co.	
" 254 bgs.	S. Figgis & Co.				" 60 pks.	London Paper Mill Co.	
" 1,301 bls.	Brinkmann & Co.				Norway, 4,635	W. D. Cork	
Indigo	J. Swire & Sons				Portugal, 1,000	Henderson, Craig, & Co.	
E. Indies, 7 cts.	Binny & Co.				Canada, 1,104	Henderson, Craig, & Co.	
" 2	R. Von Glehn & Sons				Sweden, 150	London Paper Mill Co.	
" 3	Parry & Co.				U. States, 150	Henderson, Craig, & Co.	
" 11	Arbuthnot, Latham & Co.				Holland, 957	London Paper Mill Co.	
Saffron					" 31	Thames S. T. & L. Co.	
Spain, 1 cs.	Nich's Wvs., Ltd.				Zinc Oxide—	U. States, 100 brls.	M. Ashby, Ltd.
Shumac					Holland, 2 cks.	C. Tennant, Sons & Co.	
Italy, 400 bgs.	Wig				Germany, 25 brls.	M. Ashby, Ltd.	
Tanners' Bark	T. S. Harris & Co.				" 500 cks.	Soundy & Sons	
Germany, 6 t.	Praschkauer & Co.				Zinc Sulphate—	Germany, 32 cks.	F. Smith
Farina					" 16	H. Wallace & Co.	
Germany, 100 bgs.	R. Bennett & Co.						
Holland, 100	T. H. Lee						
" 150	Dunlop Brs. & Co.						
" 100	J. Barber & Co.						
" 2 cs.	John Cockerill Line						
Gamboge							
Singapore, 20 cs.	L. & I. D. Jt. Co.						
Glucose							
U. States, 1,495 pks. 1,495 c.	L. & I. D. Jt. Co.						
" 30	J. Keiller & Son						
" 30	600 A. E. Pigott						
" 100	570 Ohlenschlager Brs.						

LIVERPOOL.

Week ending October 21st.

Aluminium—	New York, 500 bxs.	T. Ashbury
Antimony Ore—	Phillipsville, 400 t.	
Asbestos—	Montreal, 300 bgs.	
Barytes—	Bremen, 100 bgs.	
	Rotterdam, 134	
Bone Ash—	San Nicolas, 81 bgs.	
	B. Ayres, qty.	
Bone Meal—	Bombay, 354 bgs.	W. & R. Graham & Co.
Boracic Acid—	Leghorn, 5 cks.	
Boracite—	Panderna, 100 t.	
Borax—	Valparaiso, 37 sks.	
Chemicals (otherwise undescribed)	Las Palmas, 1 ck.	
Cod Oil—	St. John's, Nfld., 280 cks.	Job Brs. & Co.
Colours—	Rotterdam, 9 pks. 2 cs.	
Copper Sulphate—	New York, 5 brls. 1 kg.	Langstaff & Co.
Cottonseed Oil—	New York, 150 brls.	
Cream of Tartar—	Barcelona, 10 cks.	Sachse & Klemm
	Tarragona, 5	
	Bordeaux, 27	
Dried Blood—	San Nicolas, 79 bgs.	
Dyestuffs—	Annatto	
	Bordeaux, 1 cs.	
	Cutch	
	Rangoon, 1,450 bxs.	
	Fustic	
	Vera Cruz, 3,437 ps.	R. B. Watson & Co.
	Tampico, 2,287	H. Wedemeyer & Co.
Logwood	Belize, 101 t.	B. Cramer
Myrabolams	Bombay, 792 bgs.	D. Sassoon & Co.
"	" 100	Aldridge, Salmon & Co.
"	" 1,334	
"	" 666	W. & R. Graham & Co.
Orchella	Lisbon, 9 bgs.	A. Barbosa & Co.
Shumac	Barcelona, 100 cks.	
	Palermo, 150 bgs.	J. Kitchen, Ltd.
"	" 250	H. Rooks, Son & Co.
"	" 1,050	500 bls.
Farina—	Hamburg, 1,100 bgs.	H. Tyrer & Co.
Glucose—	New York, 1,000 brls.	T. M. Duche & Sons
Glue—	Hamburg, 2 cks.	
	Rotterdam, 100 bgs.	
Kieserit—	Hamburg, qty.	H. Tyrer & Co.
Lactic Acid—	Boston, 10 brls. 8 kgs.	
Manganese—	Rio de Janeiro, 20 sks.	Wilson, Son & Co. Ltd.
Manganese Borate—	Bremen, 4 pks.	
Mica—	New York, 12 brls.	
Ochre—	Marseilles, 43 cks.	R. R. Minon & Co.
Paint—	Valparaiso, 1 cs.	Rose-Innes, Cox & Co.
	Boston, 8 brls.	Mason & Co.
Paraffin Scale—	New York, 548 brls.	Thompson & Bedford
Phosphate—	Baltimore, 200	
	Ghent, qty.	

Phosphate Rock — Bona, 2,100 t. Brunswick, Ga., 503 10 c.	
Potash — Hamburg, 3 cks.	
Pyrites — Huelva, 1,960 t. Matheson & Co	
Salt — Cadix, 300 sks.	
Saltpetre — Hamburg, 7 cks.	
Silver Sulphide — Vera Cruz, 11 cs. Elliot Metal Co.	
Soap — Marseilles, 10 cs. Braithwaite & Sons " 5 J. & J. S. Briggs. Boston, 8	
Soapstone — Bordeaux, 420 bgs. Geo. G. Blackwell, Sons & Co.	
Soda — Rotterdam, 7 cks.	
Starch — Hamburg, 2 cks. 200 cs. Antwerp, 20 cs. J. T. Fletcher & Co.	
Stearine — " 140 Antwerp, 13 bgs. J. T. Fletcher & Co.	
Sulphur — Catania, 450 bgs 34 cks. Messina, 450 34	
Talc — Marseilles, 100 bgs.	
Tallow — New York, 125 tcs. B. Ayres, 150 cks. 390 pps. 70 hf. pps San Nicolas, 286	
Tartar — Valparaiso, 6 sks. Hainsworth Watson	
Tartaric Acid — Rotterdam, 9 cks.	
Treacle — Ghent, 12 cks.	
Ultramarine — Rotterdam, 20 cks.	
Varnish — New York, 5 bxs. 4 brls. 1 kg. Boston, 7 6 W. H. Staynes & Smith	
Waste Salt — Hamburg, 620 brls. H. Tyrer & Co. 200 t.	
White Lead — Ghent, 16 brls. Antwerp, 20 cks. J. T. Fletcher & Co.	
Rotterdam, 36	
Wood Pulp — Lagnvik (Hermosand) 2,393 bls. Becker & Co. Boston, 589 New York, 403 bdls. Christie & Co. Rotterdam, 153 bls.	
Zinc Ashes — Nantes, 100 sks. R. J. Francis	
Zinc Oxide — Antwerp, 59 brls.	
Zinc White — Rotterdam, 112 cks.	

MANCHESTER.

Week ending October 23rd.

Acetate of Lime — New York, 3,976 bgs.	
Acids — Rotterdam, 10 cks.	
Alizarine — Rotterdam, 176 cks. 227 pks.	
Aluminous Cake — Rotterdam, 116 cks.	
Aniline Colours — Rotterdam, 20 cs. 15 pks.	
Barium Chloride — Hamburg, 23 cks.	
Chemicals (otherwise undescribed) Rotterdam, 42 cks. Hamburg, 13	
Colours — Antwerp, 17 cks. Boulogne, 1 1 cs.	

Dextrine — Hamburg, 100 bgs.	
Farina — Hamburg, 180 bgs.	
Glucose — New York, 200 brls.	
Glue — Rotterdam, { 100 bgs. " 2 cks. Hamburg, 5 bls. Boulogne, 1 ck.	
Lead Acetate — Hamburg, 12 cks.	
Limestone — Antwerp, 2 crts.	
Litharge — Rotterdam, 7 cks.	
Lithopone — Rotterdam, 8 cks. Hamburg, 4	
Mica — New York, 10 brls.	
Oxalic Acid — Hamburg, 15 cks.	
Paint — New York, 8 cs.	
Paraffin Scale — New York, 625 brls.	
Potash — Antwerp, 40 dms.	
Potassium Chloride — Hamburg, 16 cks.	
Pyrites — Huelva, 1,366 t. Stott, Coker, & Co.	
Rosin — Savannah, 4,734 brls.	
Saltpetre — Hamburg, 17 cks.	
Soap — Rotterdam, 3 cs.	
Sodium Nitrate — Rotterdam, 4 cks.	
Starch — New York, 2,779 bgs. Hamburg, 640 cs. Antwerp, 80 Rotterdam, 200	
Stearine — Antwerp, 32 bgs.	
Tannic Acid — Hamburg, 1 ck.	
Tartaric Acid — Rotterdam, 10 kgs.	
Varnish — New York, 8 brls.	
Waste Salt — Hamburg, 2,100 bgs. and qty.	
White Lead — Antwerp, 6 cks.	
Wood Pulp — Drontheim, 7,634 bls. Hamburg, 480 11 cs. Kotka, 204 Felber, Jucker, & Co. 116	
Zinc Oxide — Hamburg, 20 cks. Rotterdam, 85 brls.	

HULL.

Week ending October 23rd.

Acids — Bari, 19 cks. Wilson, Sons, & Co., Ltd. Rotterdam, 1 9 blns. W. & C. L. Ringrose	
Albumen — Riga, 20 cs. Wilson, Sons, & Co., Ltd.	
Alum — Riga, 99 cks. Wilson, Sons, & Co., Ltd.	
Antimony — Rotterdam, 1 brl. W. & C. L. Ringrose Leghorn, 40 cks. Wilson, Sons, & Co., Ltd.	
Asbestos — Genoa, 3 cs.	
Barytes — Rotterdam, 46 cks. Hutchinson & Son Antwerp, 28 Bailey & Leatham, Ltd.	

Rotterdam, 24 W. & C. L. Ringrose Antwerp, 68 Bremen, 22	
Camphor — Hamburg, 4 cks. Wilson, Sons, & Co., Ltd.	
Carbolic Acid — Hamburg, 10 brls. Wilson, Sons, & Co., Ltd.	
Castor Oil — Genoa, 45 cs. Wilson, Sons, & Co., Ltd.	
Marseilles, 29 cks. Wilson, Sons, & Co., Ltd. 15 27 cs. Sons, & Co., Ltd.	
Chemicals (otherwise undescribed) Riga, 30 cks. Wilson, Sons, & Co., Ltd.	
Stettin, 10 Bremen, 5 pks. Veltmann & Co. 1 kg. Wilson, Sons, & Co., Ltd.	
Marseilles, 7 cks. Wilson, Sons, & Co., Ltd.	
Dunkirk, 6 dms. 19 cks. Wilson, Sons, & Co., Ltd. 10 dms. Sons, & Co., Ltd.	
Antwerp, 17 pks. Bremen, 4 cks. Todd & Son	
Cod Oil — Aalesund, 221 brls. Wilson, Sons, & Co., Ltd.	
Colours — Riga, 30 cks. Wilson, Sons, & Co., Ltd.	
Rotterdam, 6 Hutchinson & Son 2 cs. Wilson, Sons, & Co., Ltd.	
Antwerp, 26 pks. Wilson, Sons, & Co., Ltd.	
Hamburg, 21 cks. Dunkirk, 1 bx. Rotterdam, 5 cs. W. & C. L. Ringrose 132 pks. 36 brls.	
Cream of Tartar — Rotterdam, 2 cks. W. & C. L. Ringrose	
Cryolite — Copenhagen, 2 cks. Wilson, Sons, & Co., Ltd.	
Dextrine — Stettin, 150 bgs. Wilson, Sons, & Co., Ltd.	
Dyestuffs — Alizarine Rotterdam, 5 cks. W. & C. L. Ringrose 1 brl.	
Gambler Hamburg, 129 pks. Wilson, Sons, & Co., Ltd.	
Indigo Rotterdam, 5 cts. Hutchinson & Son	
Logwood Hamburg, 185 bgs. Wilson, Sons, & Co., Ltd.	
Madder Rotterdam, 1 ck. Hutchinson & Son	
Shumac Trieste, 86 bgs. Wilson, Sons, & Co., Ltd.	
Palermo, 850 500 " "	
Shumac Extract Trieste, 35 brls. Wilson, Sons, & Co., Ltd.	
Farina — Stettin, 520 bgs. Wilson, Sons, & Co., Ltd.	
100 Harlingen, 300 W. & C. L. Ringrose	
Glucose — Stettin, 200 bgs. Wilson, Sons, & Co., Ltd.	
Antwerp, 1 dm. Bailey & Leatham, Ltd.	
Glue — Bremen, 11 bgs. Veltmann & Co. Rotterdam, 1 cs. W. & C. L. Ringrose Hamburg, 20 bgs. Wilson, Sons, & Co., Ltd.	
Dunkirk, 49 cks. "	
Kaolin — Amsterdam, 20 cks. Reckitt & Sons	
Lead Acetate — Hamburg, 1 ck. Bailey & Leatham, Ltd.	
Minium — Rotterdam, 15 cks. Hutchinson & Son	

Nickel Salt — Rotterdam, 2 cks. Hutchinson & Son	
Paint — Marseilles, 4 cs. Wilson, Sons, & Co., Ltd.	
Phosphate — Ghent, 816 bgs. Wilson, Sons, & Co., Ltd.	
Pitch — Rotterdam, 9 cks. Hutchinson & Son	
Pumice Stone — Messina, 205 pks. Wilson, Sons, & Co., Ltd.	
Marseilles, 1 ck. Leghorn, 36 pks. 5 cs. "	
Rosin — Bremen, 1 ck. Veltmann & Co.	
Soap — Bari, 40 cs. Molletta, 450 bxs. Wilson, Sons, & Co., Ltd.	
Marseilles, 1 cs. Leghorn, 10 "	
Soda — Antwerp, 2 cks. Bailey & Leatham, Ltd. 100 bgs.	
Starch — Rotterdam, 225 pks. Hutchinson & Son Antwerp, 40 cs. Bailey & Leatham, Ltd.	
Ghent, 234 Wilson, Sons, & Co., Ltd. Rotterdam, 690 Reckitt & Sons Bremen, 2,699 Veltmann & Co.	
Stearine — Antwerp, 5 bgs. Bailey & Leatham, Ltd. 23 Wilson, Sons, & Co., Ltd.	
Sulphate — Rotterdam, 210 bgs. W. & C. L. Ringrose	
Sulphur — Catania, 491 bgs. Wilson, Sons, & Co., Ltd. " 554 pks. Palermo, 150 bgs. " Leghorn, 13 cks. "	
Talc — Leghorn, 20 bls. Wilson, Sons, & Co., Ltd.	
Tallow — Dunkirk, 84 cks. Wilson, Sons, & Co., Ltd.	
Tartaric Acid — Rotterdam, 8 cks. Hutchinson & Son	
Ultramarine — Rotterdam, 2 cks. W. & C. L. Ringrose Bremen, 8	
White Lead — Rotterdam, 12 cks. Hutchinson & Son Antwerp, 55 Bailey & Leatham, Ltd. Rotterdam, 19 W. & C. L. Ringrose	
Wood Pulp — Christiania, 715 bls. Wilson, Sons, & Co., Ltd. 45 cs. Sons, & Co., Ltd. Gothenburg, 786 bls. " Norwegian, 180 H. Biggs, Sons, & Co. Hamburg, 80 pks. Bailey & Leatham, Ltd.	
Zinc Oxide — Hamburg, 10 cks. Bailey & Leatham, Ltd.	

GLASGOW.

Week ending October 23rd.

Acetate of Lime — New York, 474 bgs.	
Albumen — Rouen, 8 cks. Stettin, 10 cs.	
Alkali — Rotterdam, 13 cks. J. Rankine & Son	
Alumina Sulphate — Rotterdam, 46 cks. J. Rankine & Son 100 bgs.	

Ammonium Chloride — Rotterdam, 4 cks. J. Rankine & Son	
Arachide Oil — Rotterdam, 3 cks. J. Rankine & Son	
Barytes — Rotterdam, 19 cks. J. Rankine & Son	
Hamburg, 20 bgs.	
Colours — Rotterdam, 36 cks. J. Rankine & Son	
Hamburg, 1 cs. 6 bxs. 125 pks. & Son	
Dyestuffs — Alizarine Rotterdam, 24 cks. J. Rankine & Son	
Aniline Rotterdam, 13 cks. J. Rankine & Son	
Aniline Colours Amsterdam, 1 ck. J. Rankine & Son	
Hamburg, 7 1 cs.	
Glue — Rouen, 61 cks. J. Rankine & Son	
Rotterdam, 20 bgs.	
Hamburg, 10	
Lamp Black — Gothenburg, 5 cks. 13 cs.	
Lime — New York, 6 puns.	
Ochre — Rouen, 10 cks.	
Oxalic Acid — Rotterdam, 6 cks. J. Rankine & Son	
Paint — New York, 80 kgs.	
Potassium Frusiate — Amsterdam, 6 cks. J. Rankine & Son	
Potassium Sulphate — Rotterdam, 6 cks. J. Rankine & Son	
Rosin — New York, 504 brls.	
Saltpetre — Hamburg, 6 cks. 40 kgs.	

Soap — Boston, 2 cs.	
Rouen, 4 cks. 30 cs.	
Sodium Acetate — Rouen, 24 cks.	
Starch — Rotterdam, 52 cs. J. Rankine & Son	
Tallow — New York, 25 tcs.	
Rotterdam, 10 J. Rankine & Son	
Tartar — Oporto, 3 cks.	
Treacle — New York, 500 brls.	
Turpentine — Antwerp, 230 brls.	
Varnish — New York, 1 brl.	
Waste Salt — Hamburg, 265 cks. 500 bgs.	
White Lead — Rotterdam, 9 cks. J. Rankine & Son	
Wood Pulp — Oporto, 100 bls.	
Gefle, 2,620 Henderson, Craig & Co.	
Skutskar, 2,416 "	
Gothenburg, 72 "	
Christiania, 660 133 pks.	
Holmestrand, 2,000 "	
Hamburg, 203 "	
Zinc Oxide — Hamburg, 52 cks.	
Zinc White — Rotterdam, 60 pks. J. Rankine & Son	

TYNE.

Week ending October 23rd.

Alum Earth — Hamburg, 43 cks. Tyne S. S. Co	
Ammonium Chloride — Rotterdam, 2 cks. Tyne S. S. Co.	
Barium Chlorate — Rotterdam, 350 bgs. Tyne S. S. Co.	
Barytes — Antwerp, 400 bgs. Tyne S. S. Co.	

Colours — Hamburg, 10 cks. Tyne S. S. Co.	
Rotterdam, 3 brls. "	
Glue — Hamburg, 40 bgs. Tyne S. S. Co.	
Rotterdam, 1 cs. "	
Lead Acetate — Hamburg, 1 ck. Tyne S. S. Co.	
Limestone — Antwerp, 3 crts. Tyne S. S. Co.	
Paint — Philadelphia, 33 cks.	
Pyrites — Huelva, 3,291 t.	
Soap — Rotterdam, 5 cs. Tyne S. S. Co.	
Starch — Rotterdam, 44 cs. Tyne S. S. Co.	
Antwerp, 90 "	
Stearine — Antwerp, 13 bgs. Tyne S. S. Co.	
Wood Pulp — Christiania, 1,103 bls. P. H. Matthies- sen & Co.	
Zinc Oxide — Antwerp, 18 brls. Tyne S. S. Co.	
Zinc White — Hamburg, 4 cks. Tyne S. S. Co.	
Rotterdam, 3 "	

GOOLE.

Week ending October 20th.

Alizarine — Rotterdam, 87 cks.	
Bleaching Powder — Rotterdam, 28 cks.	
Caoutchouc — Boulogne, 1 ck.	
Colours — Hamburg, 80 cks. 11 cs.	
Dyestuffs (otherwise undescribed) Amsterdam, 4 cks.	
Boulogne, 7 11 cs. 57 pks.	
Rotterdam, 262 65	
Farina — Hamburg, 100 bgs.	
Delfsyzhl, 1,538	

GRIMSBY.

Week ending October 23rd.

Caoutchouc — Antwerp, 4 cs. 3 pks.	
Chemicals (otherwise undescribed) Hamburg, 4 cs.	
Colours — Hamburg, 21 cks. 6 cs.	
Antwerp, 5 57 pks.	
Rotterdam, 10	
Dieppe, 4	
Farina — Hamburg, 342 bgs.	
Plumbago — Hamburg, 39 cks.	
Wood Pulp — Malmo, 80 bls.	

EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending October 27th.

Acids — Delagoa Bay, 20 cs. £26	
Madras, 10 "	11
Alkali — Bombay, 1 t. 15 c. £18	
Ammonia — New York, 2 cs. £18	
Yokohama, 4 t. 102	
Ammonia (Liquid) — Pt. Elizabeth, 1 t. £39	
Ammonium Carbonate — Sydney, 15 cs. £21	
Dunkirk, 2 t. 13 c. 74	
Ammonium Chloride — Christiania, 1 t. £33	
Bombay, 15 cks. 65	
Barcelona, 17 c. 15	
Cologne, 22 117	
Ammonium Sulphate — Madras, 10 t. £90	
Martinique, 33 13 c. 286	
Bremen, 70 578	
Dunkirk, 152 1,216	
Rouen, 20 160	
Valencia, 220 1,760	
Colombo, 8 9 83	
Rotterdam, 30 400	
Cette, 50 495	
Arsenic — Napier, 5 t. £120	
Higo, 1 24	
Borax — Wellington, 1 t. 1 c. £20	
Pt. Elizabeth, 6 7 103	
Auckland, 3 10 60	

Carbolic Acid — Hong Kong, 20 dms. £13	
Trinidad, 60 2 cs. 44	
Genoa, 10 brls. 20	
Boston, 8 cks. 66	
Montreal, 2 19	
Carbonic Acid Gas — Jersey, 45 tubes £17	
Caustic Potash — Napier, 2 t. £55	
Caustic Soda — Delagoa Bay, 11 c. £13	
Pt. Elizabeth, 4 t. 19 100	
Hong Kong, 7 5 8	
Durban, 7 2 118	
Sydney, 4 7 40	
Cape Town, 13 12	
E. London, 10 10	
Chemicals (otherwise undescribed) St. Petersburg, 20 kgs £120	
Lyttelton, 30 pks. 41	
Barcelona, 36 brls. 150	
Norroping, 12 cks. 36	
Delagoa Bay, 4 18	
Malta, 6 19	
Boulogne, 1 cs. 27	
Sourabaya, 16 58	
Dusseldorf, 18 95	
Dunkirk, 33 400	
Durban, 10 85 dms. 171	
Antwerp, 12 123	
Bombay, 10 5 42	
Valencia, 1 10	
Madras, 20 kgs. 27	
Hong Kong, 3 2 cs. 54	
Calcutta, 3 30	
Bremen, 3 28 pks. 47	
Demerara, 42 74	
Toronto, 2 18	
Malaga, 3 13	
Cairo, 3 13	

Halifax, 4 23	
Sydney, 7 22	
Adelaide, 77 78	
Brisbane, 5 kgs. 100 389	
Karachi, 5 cs. 36	
Marseilles, 43 106	
Paris, 13 29	
Patea, 10 kgs. 16	
Amsterdam, 5 30	
Stockholm, 8 75	
Melbourne, 2 cs 42 128	
M. Video, 1 12	
Montreal, 20 kgs. 25 dms. 158	
Genoa, 20 114	
Hamburg, 1 20 236	
Rotterdam, 15 3 42 189	
Citric Acid — Bombay, 6 c. £42	
Sydney, 1 t. 10 179	
Durban, 1 6	
Jamaica, 1 7	
Toronto, 11 61	
Hamburg, 20 kgs. 120	
Lisbon, 3 cks. 24	
Genoa, 1 5 150	
Brussels, 5 30	
Barcelona, 11 59	
Pt. Elizabeth, 2 16	
Coal Products — Alizarine Bombay, 155 cks. £494	
Madras, 20 55	
Boston, 60 725	
Aniline Ghent, 2 cks. £35	
Melbourne, 1 cs. 15	
Calcutta, 2 110	
Aniline Salts Genoa, 10 cks. £80	
Anthracene Gothenburg, 250 cks. £165	

Dusseldorf, 226 928	
Cologne, 319 8,836	
Benzine Melbourne, 50 dms. £16	
Benzol New York, 20 dms. £110	
Rotterdam, 3 15	
Cresosote New York, 1,000 brls. £600	
Gibraltar, 16 15	
Naphtha Melbourne, 20 dms. £12	
Dunedin, 30 5	
Ghent, 8 60	
Naphthaline Antwerp, 400 bgs. £117	
Hamburg, 11 cks. 75	
Pitch New York, 300 cks. £117	
Dunkirk, 255 t. 287	
Malta, 100 brls. 38	
Alexandria, 350 114	
Durban, 42 cks. 200 dms 52	
Abo, 250 t. 257	
Antwerp, 820 1,015	
Pyridine Stettin, 5 cks. £89	
Tar Delagoa Bay, 70 dms. £5	
Malta, 5 brls. 48	
Durban, 1,030 14	
Calcutta, 14 40 cks. 110	
Madras, 40 cks. 110	
New York, 15 14	
Auckland, 102 20 20	
Melbourne, 10 7	
Abo, 1,500 184	
Coal Products (otherwise unde-) Havre, 855 dms. £20	
Boulogne, 30 cks.	

LIVERPOOL.

Week ending October 27th.

Copper Sulphate—		
Bombay, 1 t.	£16	
Antwerp, 10	71	
Coppers—		
Cologne, 8 c.	£13	
Auckland, 5 t.	10	
Cream of Tartar—		
Wellington, 11 c.	£45	
Yokohama, 1 t.	32	
Auckland, 10 kgs.	39	
Adelaide, 1	125	
Sydney, 2	160	
Disinfecta—		
Newcastle, 24 pks.	£11	
Durban, 85	21	
Bombay, 80 dms.	41	
E. London, 8 cs.	15	
Wellington, 10	16	
Sydney, 20	76	
Adelaide, 20	20	
Pt. Elizabeth, 4	76	
Hamburg, 25 cks.	125	
Guano—		
Dunkirk, 112 t.	£448	
Lime—		
Berlice, 10 t.	£20	
Jamaica, 19	135	
Manure—		
Trinidad, 2 t. 10 c.	£86	
Orotava, 3	15	
Jersey, 164	30	
Amsterdam, 297	10	
Guernsey, 2	16	
Ghent, 40	14	
Dunkirk, 5	2	
Rouen, 42	10	
Antwerp, 65	10	
Marseilles, 4	13	
Havre, 25	85	
Nitric Acid—		
Jersey, 14 crbys.	£28	
E. London, 20 cs.	40	
Oxalic Acid—		
Sydney, 2 cks.	£20	
Oxygen—		
B. Ayres, 1 cs.	£65	
Phosphorus—		
Melbourne, 10 cs.	£97	
Oporto, 3	42	
Potash Salts—		
Wellington, 2 t. 10 c.	£185	
Melbourne, 2	190	
Potassium Bicarbonate—		
Santos, 10 c.	£19	
Potassium Chlorate—		
Rotterdam, 10 c.	£20	
Bombay, 1 t.	46	
Potassium Cyanide—		
Sydney, 30 cs.	£264	
Rio de Janeiro, 3 t. 10 c.	415	
E. London, 3	259	
Delagoa Bay, 26	14	
Durban, 22	11	
Townsville, 26	10	
Potassium Prussiate—		
Genoa, 1 t.	£48	
Saltpetre—		
Wellington, 10 c.	£11	
Montreal, 5 t.	92	
Amsterdam, 10	14	
M. Video, 2	1	
Rio de Janeiro, 9	9	
Sheep Dip—		
Newcastle, 1 t. 2 c.	£25	
Delagoa Bay, 4	11	
E. London, 4	4	
Pt. Elizabeth, 50 cs.	75	
Durban, 2	5	
B. Ayres, 275 pks.	3,000	
M. Video, 200	7,125	
Lyttelton, 300	450	
Wellington, 300	625	
Sydney, 250	575	
Invercargill, 100	438	
Antwerp, 1,500	1,875	
Cape Town, 500	11	
Sodium Bicarbonate—		
Yokohama, 10 c.	£14	
Durban, 2 t.	14	
Sodium Silicate—		
Sydney, 5 t. 7 c.	£23	
Sulphuric Acid—		
Cape Town, 50 cs.	£32	
Santos, 8 c.	10	
Superphosphates—		
Martinique, 116 t.	£406	
Tartaric Acid—		
Brisbane, 10 c.	£60	
Sydney, 1 t. 10	20 cs.	300

Acetate of Lime—

Lisbon, 5 cks. £10

Acetic Acid—

Copenhagen, 1 t. 14 c. £32

Alum—

Pernambuco, 19 c. 3 q. £5

Montreal, 14 t. 14 2 74

Constantinople, 8 19 1 45

Galatz, 5 9 27

Dunedin Whf., 2 5 15

Aluminous Cake—

Melbourne, 6 t. 2 q. 19

Ammonium Carbonate—

Ceara, 4 c. £8

Genoa, 5 t. 5 2 q. 163

Stettin, 18 2 26

Konigsberg, 5 5 7

Antwerp, 1 9 1 42

Stockholm, 6 6 9

Montreal, 7 5 1 190

Rangoon, 6 1 20

Ammonium Chloride—

Genoa, 1 t. 9 c. £11

Lisbon, 4 9

Barcelona, 1 8 28

Trieste, 1 20

Patras, 4 6

Philadelphia, 15 cks. 248

Stettin, 14 13

Danzig, 2 8 42

Antwerp, 12 19

Ammonium Sulphate—

Samarang, 18 t. 10 c. £143

Las Palmas, 6 14

Genoa, 25 205

Leghorn, 10 82

Norfolk, Va., 25 205

Boston, 50 10 403

Lisbon, 21 19 182

Barcelona, 91 5 751

Valencia, 179 17 1,520

Nantes, 64 19 500

Bordeaux, 30 6 3 q. 251

La Palma, 2 14 17

Bleaching Powder—

Ancona, 11 cks. 7 brls.

Baltimore, 59

Boston, 717

Calamata, 5

Cape Town, 6 40 bxs.

Corunna, 6

Genoa, 156

Havana, 50

Leghorn, 18

Montreal, 65

Naples, 20

New York, 154

Philadelphia, 49

Patras, 5

Rio de Janeiro, 41

Venice, 33

Bone Ash—

Stockholm, 40 t. 8 c. 3 q. £220

Borax—

Leghorn, 1 t. 18 c. £30

Genoa, 1 2 3 q. 20

Melbourne, 9 16 2 157

Barcelona, 1 14

Rotterdam, 12 2 192

Hamburg, 2 32

Ibrail, 2 5 45

Ghent, 1 15

Montreal, 26 2 559

Calcium Chloride—

B. Ayres, 10 t. 6 c. £23

Genoa, 5 c. £15

Toronto, 1 t. 5 75

Milan, 3 189

Caustic—

Calcutta, 7 dms.

Montreal, 125

Caustic Potash—

Antwerp, 5 t. 1 c. £150

Cadix, 4 8

Caustic Soda—

Ancona, 20 dms.

Antwerp, 123

Baltimore, 120

Barcelona, 30 60 cks.

Bari, 122

Bilbao, 115

Bombay, 25

Boston, 54 brls.

Braila, 30

B. Ayres, 50

Dunkirk, 40 kgs.

E. London, 20 15 cs.

Ferrol, 7	
Fiume, 20	
Galatz, 20	
Genoa, 25	20 60 kgs.
Hamburg, 10	
Havana, 50	
Hiogo, 162	
Ibrail, 34	
Kingston, 10	
Konigsberg, 53	
Madras, 4	
Manila, 135	
Maranham, 10	
Mollendo, 30	
M. Video, 50	
Montreal, 20	
New York, 468	
Oporto, 105	
Para, 20	
Parnahyba, 10	
Philadelphia, 200	
Pt. Elizabeth, 30 cs.	
Punta Arenas, 50	
Rio de Janeiro, 40	
Rotterdam, 155	
San Francisco, 75	
San Sebastian, 45	
Santander, 50	
Seville, 85	17 brls.
Tarragona, 40	
Talcahuano, 40	
Valparaiso, 100	
Yokohama, 1,120	

Chemicals (otherwise undes.)—

Hamburg, 1 t. £28

Rotterdam, 8 c. 15

Odessa, 8 2 q. 201

Alexandria, 6 brls. 54

Karachi, 15 23

Marseilles, 15 23

Philadelphia, 13 11 410

China Clay—

Baltimore, 100 t.

Boston, 1,219 10 c.

Calcutta, 25 15

Lisbon, 10

Montreal, 203 10

New York, 300

Philadelphia, 288 cks.

Portland, 50

Rio de Janeiro, 10

Citric Acid—

Bilbao, 2 t. £232

Seville, 15 c. 90

Coal Products—

Aniline Co.ours, 28 cks.

New York, 28 cks.

Aniline Salts, 15 cks.

Barcelona, 21 cs.

Vera Cruz, 4 brls.

Piraeus, 1

Syra, 2

Creosote

Bordeaux, 250 cks.

Creosote Oil

Lisbon, 50 brls.

Colon, 20 dms.

Conakry, 100 bxs.

Tar, 20 brls.

New York, 12

Copper Sulphate—

Leghorn, 26 t. 15 c. £442

Naples, 6 1 q. 97

Amsterdam, 4 19 2 73

Hamburg, 2 10 42

Deli, 1 6 22

Madras, 1 16

Nantes, 4 18 2 76

Victoria, B.C., 2 33

M. Video, 7 5 3 113

Syra, 5 2 71

Patras, 50 4 763

Danzig, 19 2 15

Piraeus, 3 3 2 49

Bourgas, 1 18

Rotterdam, 2 19 46

Bordeaux, 57 10 909

Antwerp, 7 11 3 119

Copperas—

Calcutta, 4 t. 10 c. £10

Rodosto, 3 18 7

Disinfectants—

Rio de Janeiro, 2 c. £6

French Chalk—

Pernambuco, 90 bgs.

Guano—

Seville, 1 t. 16 c. £12

Lime—

Cape Coast, 5 t. 12 c. £14

Lagos, 1 12 10

Magnesia—

New York, 6 cs.

Valparaiso, 20 brls.

Manure—

Marseilles, 10 t. 1 c. £55

Oxalic Acid—

Boston, 10 t. 10 c. £400

Paint—

Alexandria, 70 kgs. 15 dms.

Algoa Bay, 30 4 cks.

Antwerp, 30 2 bxs.

Bilbao, 3 cs.

B. Ayres, 20 dms.

Calcutta, 20 cs.

Callao, 102

Conakry, 60

Constantinople, 60

Curacao, 8 cks.

Gibraltar, 24

Guayaquil, 3

Havana, 1

Iquitos, 35

Iquique, 2 5

Lagos, 24 12 dms.

Larnaca, 3 brls.

Malta, 3 brls.

Manaos, 33 pks.

Maranham, 58

Mollendo, 6

Montreal, 38

New York, 10 kgs. 33 cs.

Para, 10 kgs. 33 cs.

Porto Plata, 2 brls.

Prevesa, 2 brls.

Rosario, 10

St. John's Nfld., 205

St. Thomas, 44

San Juan, 39 brls.

San Sebastian, 10 dms.

Santander, 0

Savannah, 20

Singapore, 41

Trieste, 4

Valparaiso, 75 15

Vera Cruz, 190

Yokohama, 950

Painters Colours—

Bassein, 12 kgs. 1 brl. 4 dms.

Bremen, 50 bgs.

Calcutta, 20

Gethenburgh, 27

Hamburg, 102 pks.

Havana, 4 cks.

Salt—

Akassa,	444 t.	5 c.
Antwerp,	325	
Axim,	12	10
Baltimore,	40	1,300 sks.
Bas Konilon,	53	
Benin,	1,000 bgs.	
Boma,	3 t.	12
Boston,	100	
Brisbane,	10	
B. Ayres,	70	11
Calcutta,	1,872	
Cape Town,	100	
Conakry,	11	3 2,48
Delagoa Bay,	3,6 bgs.	
E. London,	760	
Flensburg,	250 t.	
Ghent,	60	
Guayaquil,	1	5
Kinsembo,	7	2
Lagos,	101	14
Landana,	13	15
Matadi,	10	10
Melbourne,	39	5
M. Video,	100 cs.	
Montreal,	1,171 t.	500
N. Orleans,		1,300
Old Calabar,	50	
Opobo,	2,000 bgs.	
Rosario,		200
Rotterdam,	300 t.	
Sierra Leone,	100	
Salt Pond,	350 bgs.	
Stockholm,	55 t.	
Sydney,	175	
Ukaka,	500 bgs.	
Wellington,	130	

Salt Cake—

Lisbon,	15 t.	£82
Leghorn,	200	396
Philadelphia,	100	1 c.

Saltpetre—

Ceara,	1 t.	10 c.	£32
Maranham,	19	3 q.	21
Maceio,	10		6
St. John's, N. B.,	2	2	3
Parnabyha,	3		63
Manaos,	1	10	33
Vancouver City,	3	13	14
San Francisco,	3	8	70

Sheep Dip—

Melbourne,	2 t.	10 c.	£60
Pt. Elizabeth,	3	3	3 q.
B. Ayres,	12	13	1
Charlotte Town,	4	2	5
Punta Arenas,	11	5	250
Calcutta,	1	9	1

Soap—

Accra,	90 bxs.	
Addah,	29	
Akassa,		72 tins
Alexandria,		30 cs.
Antwerp,	27	
Appam,	115	
Axim,	100	
Bangkok,	100	
Bathurst,	233	
Bombay,		18 cks.
B. Ayres,	1	
Calcutta,		20
Camerons,	50	
Canaria,	459	
C. C. Castle,	40	4
Cape Lopez,	50	
Cape Town,	5,550	
Ceara,	1	
Colon,	20	
Conakry,	50	
Constantinople,	16	
Curacao,	230	
Delagoa Bay,	600	
E. London,	550	50 bdlis.
Fogo,	6	
Galatz,	24	
Genoa,	215	
Gibraltar,	150	11
Halifax,	400	
Hamburg,	203	500
Havre,	2,401	
Java,	1,100	
Kinsembo,	100	
Lagos,	1 frk	50
Larnaca,		14
Las Palmas,	85	
Malta,	400	
Manila,	2	
M. Video,	2	
Montreal,	1,300	
Mossel Bay,	500	
New York,	500	
Opobo,	550	24
Para,	250	1
Pt. Natal,	1,850	63

Piræus,	28
Rangoon,	80
Rotterdam,	205
St. John's, N. Id.,	450
Stettin,	12
Stockholm,	100
Sydney,	1
Trinidad,	900
Ukaka,	50
Winnebuh,	165

Soda Alkali—

Galatz,	40 brls.
Melbourne,	20
Montreal,	85
Oporto,	40
Quebec,	60

Soda Ash—

Alexandria,	10 brls.
Antwerp,	1,005 bgs.
Baltimore,	400
Barcelona,	36
Bombay,	10
Boston,	1,410

B. Ayres,

Calcutta,	100 kgs.	50
Cape Town,	40	
Catania,	50 bgs.	
Copenhagen,	600	
Flume,	199	20
Genoa,	400	
Ghent,	67	12
Gutujewsky,		50
Hamburg,	900	100
Hioho,		425
Leghorn,	100	
Liban,	200	
Maranham,	20	50
Mitylene,		40
Montreal,	500	5 tcs.
New York,	1,400	32
Oporto,		26
Parnabyha,		15 brls.
Philadelphia,	4,292	40
Piræus,	25	

Rotterdam,	30	14
Salonica,	88 kgs.	
San Sebastian,	50	24
Seville,	30	
Smyrna,	245	
Stettin,		3
Trieste,	200	
Toronto,		23
Yokohama,		522
Venice,	100	

Soda Crystals—

Alexandria,	50 brls.
Bombay,	390 kgs.
Gibraltar,	80
Hamburg,	400
M. Video,	15
Montreal,	250 760 355
Philadelphia,	767 bgs.
Pt. Natal,	25 kgs.
Rotterdam,	30
Truro,	150
Valparaiso,	40
	75

Soda Oxide—

Leghorn,	5 cs.
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Sodium Arseniate—

Bombay,	5 cks.
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Sodium Bicarbonate—

Ancona,	55 kgs.
Antwerp,	20
Barcelona,	375
Batoum,	50
Bombay,	125
Calcutta,	875
Callao,	10
Copenhagen,	20
Cordoba,	60 bgs.
E. London,	60 brls.
Fairwater,	100
Galatz,	50
Gibraltar,	20
Hamburg,	
Havana,	20
Hioho,	500
Hong Kong,	14
Karachi,	188
Lisbon,	70
Marseilles,	102
M. Video,	45
Montreal,	1,050
Oporto,	60
Palermo,	45
Rangoon,	50
Rotterdam,	150
Rosario,	60 bgs.

St. Petersburg,	200
Santiago,	10
Seville,	67
Teneriffe,	10
Truro,	120
Tripoli,	25 brls.
Varna,	40
Vera Cruz,	100
Victoria, V.I.,	3

Sodium Carbonate—

Boston,	56 brls.
New York,	60

Sodium Chlorate—

Hamburg,	5 kgs.	3 cks.
Lisbon,		1 brl.
Philadelphia,	100	
Rio de Janeiro,	10	
St. Petersburg,	220	

Sodium Hyposulphite—

Montreal,	29 cks.
Quebec,	13

Sodium Silicate—

Philadelphia,	131 cks.
Rio de Janeiro,	12 brls.
Bombay,	5
Southern Cross,	10

Starch—

Pernambuco,	120 bgs.
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Sulphur—

St. John's, N. B.,	1 t.	£47
Pernambuco,	5	14 c.
Montreal,	85	1
Boston,	175	7

Sulphuric Acid—

Singapore,	1 t.	4 c.	£12
Rio de Janeiro,		9 cs.	8
Maranham,	1	2 c.	2 q.

Superphosphates—

Nantes,	98 t.	8 c.	2 q.	£221
Gandia,	100	3	3	301
Las Palmas,	20			90
Barcelona,	60			150
Valencia,	50	1		95
Marseilles,	10	1		22

Tannic Acid—

Lisbon,	5 c.	£42
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Tartaric Acid—

Vera Cruz,	1 c.	£6
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Varnish—

Cartagena,	20 dms.	
Lagos,		1 cs.
Melbourne,	13 pks.	
Naples,		1
Rangoon,	1 brl.	
Valparaiso,	20	

White Lead—

Pt. Elizabeth,	160 dms.
Sierra Leone,	80 kgs.

MANCHESTER

Week ending October 27th.

Alum—

Alexandria,	50 brls.
Alexandria,	60
Beyrout,	60
Bombay,	84
Tunis,	3

Ammonium Carbonate—

Rotterdam,	12 cks.	6 kgs.
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Aniline Colours—

Rotterdam,	4 cks.	1 cs.	5 kgs.
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Aniline Salts—

Rotterdam,	5 dms.
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Asbestos—

Bombay,	4 coils
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Benzol—

Rotterdam,	1 dm.
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Carbolic Acid—

Treport,	6 cks.	48 btlis.
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Caustic Soda—

Hamburg,	20 dms.
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Copperas—

Alexandria,	175 brls.
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Cottonseed Oil—

Tunis,	80 brls.
Jaffa,	6

Creosote—

Treport,	30 cks.	27 bgs.
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Farina—

Bombay,	10 bgs.
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Glue—

Antwerp,	10 cks.
Rotterdam,	28

Linseed Oil—

Tunis,	4 brls.
Beyrout,	20

Magnesium Sulphate—

Bombay,	300 bgs.
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Naphtha—

Treport,	50 cks.
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Painters' Colours—

Alexandria,	25 cks.
Bombay,	7
	3 cs.
	1 kg.

Paraffin Wax—

Larnaca,	2 cs.
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Pitch—

Antwerp,	2,092 c.
Cette,	460 t.

Pumice Stone—

Bombay,	1 cs.
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Pyridine—

Rotterdam,	13 cks.
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Soap—

Bombay,	12 cs.	3 bxs.
Malta,	10	

Sodium Arseniate—

Antwerp,	4 cks.
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Sodium Bicarbonate—

Bombay,	125 kgs.
Alexandria,	10

Sodium Naphthionate—

Antwerp,	57 cks.
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Sodium Sulphate—

Bombay,	100 bgs.
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Tallow—

Rotterdam,	5 cks.
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Toluol—

Rotterdam,	20 dms.
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Whiting—

Bombay,	17 cks.
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HULL.

Week ending October 23rd.

Alkali—

Helsingfors,	5 cks.
Liban,	150
Riga,	185
Trieste,	892 dms.
	69

Ammonium Sulphate—

Bordeaux,	42 bgs.
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Barium Carbonate—

Stettin,	7,000 c.
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Bleaching Powder—

Danzig,	99 cks.
Stettin,	44

Chemicals (otherwise undescribed)

Abo,	1 ck.
Antwerp,	4
Amsterdam,	23
Bari,	15 kgs.
Bordeaux,	10
Christiania,	1 ck.
Danzig,	133
Gothenburg,	4
Helsingfors,	2
Hamburg,	2
Konigsberg,	265
Riga,	33
Rotterdam,	33
Stavanger,	13
St. Petersburg,	2
Stettin,	4
Uleaborg,	25
Wyburg,	200
Wasa,	9

Cottonseed Oil—

Antwerp,	323 c.
Amsterdam,	603
Christiania,	17
Copenhagen,	241
Dunkirk,	400
Gotenburg,	30
Hamburg,	2,252
Harlingen,	100
Konigsberg,	84
Marseilles,	8,335
Rotterdam,	193
Rouen,	202
Stettin,	240
Stockholm,	17

Guano —	
Dunkirk, 50 t.	
Linseed Oil —	
Antwerp, 12 c.	
Bordeaux, 35	
Christiania, 125	
Copenhagen, 17	
Drontheim, 94	
Hamburg, 51	
Naples, 14	
Stavanger, 3	
Stockholm, 75	
Litharge —	
Leghorn, 7 cks	
Logwood —	
Genoa, 50 tins	
Manure —	
Marseilles, 242 bgs.	
New York, 665	
Stettin, 292	
Naphtha —	
Marseilles, 100 cks.	
Ochre —	
Dunkirk, 1 ck.	
Painters' Colours —	
Abo, 2 dms.	
Antwerp, { 31 cks. 3 cs. 240	
Amsterdam, 8	120 pks.
Bordeaux, 8	
Christiania, 20 dms.	
Copenhagen, 1 2 3	
Danzig, 28 1	
Dunkirk, 1 1	
Ghent, 2 2	
Gothenburg, 2 36 pks.	
Genoa, 60 5 dms.	
Hango, 5 7	
Hamburg, 36	
Harlingen, 5	
Marseilles, 8	
Messina, 1	
Naples, 10 1	
Riga, 5	
Rotterdam, 18 9 24	
Rouen, 4 7	
Stavanger, 1	
Stettin, 51 25 pks.	
Uleaborg, 1	
Venice, 10	
Paraffin Wax —	
Helsingfors, 50 bls.	
Pitch —	
Antwerp, 100 t.	
Dunkirk, 305	
Superphosphates —	
Bordeaux, 750 bgs.	
Tallow —	
Gothenburg, 5 cks.	
Stockholm, 1	
Tar —	
Danzig, 6 cks.	
Rotterdam, 3 bls.	
Stettin, 5 cks.	
Wasa, 15 bls.	
Christiania, 5	
Christiansund, 10	
Copenhagen, 21 cks.	
Treacle —	
Abo, 25 cks.	
Turpentine —	
Helsingfors, 20 bls.	
Varnish —	
Ghent, 9 bls.	
Gothenburg, 1 cs.	
Palermo, 1 ck.	
Stettin, 9	
Stockholm, 3	
Christiania, 1	
Danzig, 3	
Genoa, 2 bls.	

GLASGOW.

Week ending October 28th.

Alumina Sulphate —	
Dunedin, 7 t. 7½ c.	
Ammonia (Liquid) —	
Hong Kong, 1 t. 9 c.	
Ammonium Chloride —	
Italy, 25	
Ammonium Nitrate —	
Spain, 5 t. 17½ c.	
Ammonium Sulphate —	
Barcelona, 20 t. 8½ c.	
Gandia, 75 16	

Valencia, 234 10½	
Venice, 41 3½	
Rotterdam, 10	
France, 152 6½	
Italy, 20 3	
Boracic Acid —	
Yokohama, £68 17s.	
Borax —	
Rotterdam, 1 t. 3 c.	
Caustic Soda —	
Canada, 65 t. 19½ c.	
Coal Products —	
Alizarine Oil	
Liston, £32	
Benzol	
Hamburg, 15 t. 1 c.	
Creosote Oil	
France, £1,662	
Christiania, 14	
Hamburg, 5 t. 7 c.	
Naphtha	
Dunedin, 200 glns.	
Pitch	
Hamburg, 31 t. 7 c.	
Canada, £405	
Tar	
Christiania, £30	
Riga, 220	
Hamburg, 94 t. 10 c.	
Norrköping, 640	
Coal Products (otherwise undes.) —	
Rotterdam, 75 bls.	
Copperas —	
Bombay, £48	
Calcutta, 74	
Dried Blood —	
Boston, 1 t. 10 c.	
Rouen, 10 3	
France, 10	
Dye-stuffs (otherwise undescribed)	
Rio de Janeiro, £500	
Extracts —	
Spain, £97	
Liston, £56 18s.	
Farina —	
Rio de Janeiro, 2 t. 5½ c.	
Calcutta, £60	
Glue —	
Dunedin, £26	
Nagasaki, 72	
Guano	
Malaga, 56 t. 1½ c.	
Lead Acetate —	
Canada, £163	
Lead Nitrate —	
Canada, £50	
Linseed Oil	
Kingston, Jam., 4 t. 13½ c.	
Wellington, 2	
Rio de Janeiro, 4 3½	
Canada, 20 12½	
Litharge —	
Antwerp, £20	
Logwood —	
Dunedin, £94	
Lyttelton, 35	
N. Zealand, 48	
Manganese —	
Rotterdam, £120	
Manganese Oxide —	
U.S.A., £175	
Manure —	
Jamaica, 8 t. 17 c.	
Paint —	
Auckland, £50	
Dunedin, qty.	
Wellington, 59	
Hiogo, 28	
Painters' Colours —	
Dunedin, qty.	
Napier, £14	
Trinidad, 158.	
Amsterdam, 43	
Port of Spain, 15	
Waguanui, 20 15	
Calcutta, £119	
Huelva, "	
Paraffin Wax —	
Barcelona, £311	
Fiume, 1,017	
Paris, 46	
Rouen, £32 9s.	
Trieste, £100	
Venice, 59	
Christiania, 25	
Bahia, 50	
Bombay, 70	
Bodeaux, 132	
San Sebastian, 36	

Hamburg, 13 t.	
France, 370	
Italy, 185	
Liston, 435	
Potassium Bichromate —	
Rouen, £181	
Venice, 202	
Antwerp, 906	
Canada, 132	
Potassium Cyanide —	
Valparaiso, £295	
Salt —	
Kingston, Jam., 50 t.	
Sheep Dip —	
Dunedin, £1,100	
Lyttelton, 700	
The Bluff, 70	
Soap —	
Canterbury, 12½ c.	
Horten, 38 lbs.	
Bombay, 2 t. 14	
Calcutta, 1 13½	
Sodium Bichromate —	
Antwerp, 1 t. 18½ c.	
Rouen, 26 3	
Ghent, 6 1½	
Canada, 7 9	
Italy, 11 14	
Liston, 17	
Starch —	
Rio de Janeiro, £280	
Liston, 59	
Tallow —	
Rotterdam, 18 t. 3 c. £12 15s.	
Treacle —	
Christiania, 1 t. 17½ c.	
Zinc Sulphate —	
Canada, £20	

TYNE.

Week ending October 23 d.

Alkali —	
Konigsberg, 10 c.	
Riga, 125 t. 14	
St. Petersburg, 20 1	
Hamburg, 10 7	
Amsterdam, 37 3	
Alum —	
Seville, 1 t. 1 c.	
Alumina Hydrate —	
Antwerp, 5 t. 2 c.	
Ammonium Carbonate —	
St. Petersburg, 7 t. 10 c.	
Ammonium Chloride —	
St. Petersburg, 5 t. 16 c.	
Antimony —	
Hamburg, 33 t. 10 c.	
Antwerp, 2	
Riga, 3	
St. Petersburg, 10 10	
Gothenburg, 16	
Rotterdam, 30	
Arsenic —	
Amsterdam, 17 c.	
Copenhagen, 1 t. 13	
Barium Binoxide —	
Rotterdam, 4 t. 6 c.	
Barium Carbonate —	
Konigsberg, 2 t.	
Blanc Fixe —	
Genoa, 10 t. 2 c.	
Bleaching Powder —	
Amsterdam, 24 t. 3 c.	
Riga, 7 16	
St. Petersburg, 233 8	
Hamburg, 17 15	
Antwerp, 5 9	
Christiania, 20 2	
Rotterdam, 32 10	
Odense, 5	
New York, 7 11	
Caustic Soda —	
Bordeaux, 5 t. 16 c.	
Konigsberg, 32	
Riga, 59	
Antwerp, 41 4	
Seville, 16 18	
Aarhus, 1 0	
Copenhagen, 2 18	
Gothenburg, 3 9	
Rotterdam, 22 2	
Aalborg, 4 7	
New York, 65 9	
Genoa, 61 5	

Fluor Spar —	
New York, 105 t. 15 c.	
Litharge —	
Riga, 31 t. 9 c.	
Hamburg, 1 3	
Antwerp, 12	
Rotterdam, 17	
New York, 1 5	
Genoa, 11	
Magnesia —	
St. Petersburg, 2 c.	
Hamburg, 10 t. 5	
Antwerp, 2	
Rotterdam, 2	
Magnesium Carbonate —	
St. Petersburg, 2 t. 10 c.	
Magnesium Sulphate —	
Seville, 19 c.	
Manganese Ore —	
New York, 5 t. 6 c.	
Paint —	
Antwerp, 1 t. 12 c.	
Rotterdam, 10	
Soda —	
Amsterdam, 40 t. 4 c.	
Seville, 3 5	
Aarhus, 10 17	
Gothenburg, 13 15	
Christiania, 18 12	
Rotterdam, 10 4	
Leghorn, 19 12	
Messina, 2 1	
Constantinople, 24 7	
Soda Ash —	
Konigsberg, 190 t. 11 c.	
Riga, 20 4	
Liston, 10 2	
Gothenburg, 130 6	
New York, 17	
Genoa, 10 16	
Sodium Hyposulphite —	
Genoa, 12 t.	
Sodium Silicate —	
Seville, 16 t. 10 c.	
Gothenburg, 3 6	
Sodium Sulphide —	
Genoa, 3 t. 14 c.	
Sulphur —	
Riga, 125 t.	
Gothenburg, 325	
White Lead —	
Riga, 6 t. 3 c.	
Copenhagen, 1 1	
Witherite —	
Riga, 9 t. 15 c.	
Zinc Ashes —	
Rotterdam, 1 t. 18 c.	

GOOLE.

Week ending October 20th.

Alkali —	
Rotterdam, 1 ck.	
Benzol —	
Rotterdam, 75 cks.	
Chemicals (otherwise undescribed)	
Rotterdam, 2 cks.	
Coal Products (otherwise undes.) —	
Antwerp, 1 ck. 2 cs.	
Boulogne, 7 2	
Rotterdam, 83 3	
Colours —	
Amsterdam, 13 drs.	
Ghent, 1 tin	
Pitch —	
Antwerp, 604 t.	

GRIMSBY.

Week ending October 23rd.

Aniline —	
Dieppe, 2 cks. 7 pks.	
Rotterdam, 3	
Chemicals (otherwise undescribed)	
Antwerp, 5 cks.	
Coal Products (otherwise undes.) —	
Antwerp, 8 bls.	
Hamburg, 6	
Colours —	
Antwerp, 26 pks.	
Hamburg, 79 cks.	
Rotterdam, 2 cs.	
Dye-stuffs (otherwise undescribed)	
Dieppe, 4 cks.	

PRICES CURRENT.

WEDNESDAY, NOV. 3RD, 1897.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.B. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—				£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/9	& 8/9			
" Glacial	"		40/-			
Arsenic S.G., 2000°	"	1	4	0		
Fluoric	per lb.	0	0	3 1/4		
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0	10		
" (Cylinder), 30° Tw.	"	0	3	0		
Nitric 80° Tw.	per lb.	0	0	1 3/4		
Nitrous	"	0	0	1 1/4		
Oxalic	nett	0	0	3 1/2		
Phosphoric, 1750°	"	0	0	11 1/2		
Picric	"	0	0	11		
Sulphuric (fuming 50 %/s)	per ton	15	10	0		
" (monohydrate)	"	5	10	0		
" (Pyrites, 168°)	"	3	0	0		
" 150°	"	1	5	0		
" (free from arsenic, 145°)	"	1	7	6		
Sulphurous (solution) S.G. 1025	"	3	0	0		
Tannic (pure)	per lb.	0	1	2 1/2		
Tartaric	"	0	1	1 1/2		
Arsenic, white powdered	nett	per ton	21	15	0	
Alum (loose lump)	"	"	4	10	0	
Alumina Sulphate (pure)	"	"	4	2	6	
Aluminoferic	"	"	2	3	6	
Aluminium (Ingot metal 98/99 3/4 %	nett	"	148	0	0	
Ammonia, Anhydrous	per lb.	0	1	3		
" 880=28° B.	"	0	0	2 1/4		
" =24° B.	"	0	0	1 3/4		
" Carbonate	nett	"	0	0	3	
" Muriate	per ton	18	0	0		
" (sal-ammoniac) 1st & 2nd	per cwt.	33/-	& 31/-			
" Nitrate	per ton	31	0	0		
" Phosphate	per lb.	0	0	3 1/2		
" Sulphate (grey) London	per ton	8	7	6		
" (grey) Hull	"	8	6	3		
Aniline Oil (pure)	per lb.	0	0	7		
Aniline Salt	"	0	0	7		
Antimony	per ton	29	10	0		
" (tartar emetic)	per lb.	0	0	8		
" (golden sulphide)	"	0	0	10		
Barium Chloride	per ton	6	10	0		
" Carbonate (native)	"	3	10	0		
" Sulphate (native levigated)	"	42/6	to 65/-			
Bleaching Powder, 35 %	nett	"	6	2	6	
" Liquor, 7 %	"	3	10	0		
Bisulphide of Carbon	"	12	0	0		
Chromium Acetate (crystal)	per lb.	0	0	6		
Calcium Chloride	per ton	2	5	0		
China Clay (at Runcorn) in bulk	"	15/-	to 30/-			
Coal Tar Products and Dyes:—						
Alizarine (artificial) 20 %	nett	per lb.	0	0	6 1/4	
Magenta	"	0	3	9		
Anthracene, 30 % A, f.o.b. London	per unit	per cwt.	0	0	6	
Benzol, 90's	per gallon	0	1	11		
" 50/90	"	0	2	1		
Carbolic Acid (crude 60°)	per gallon	0	2	0		
" (crystallised 40°)	per lb.	0	0	6 1/4		
" (liquid 95/97%)	per gallon	0	1	0		
Creosote (ordinary)	"	0	0	2 1/2		
" (filtered for Lucigen light)	"	0	0	3		
Crude Naphtha 30 % @ 120° C.	"	0	0	10		
Grease Oils, 22° Tw.	per ton	2	15	0		
Pitch, f.o.b. Liverpool or Garston	"	0	18	0		
Solvent Naphtha, 90 % at 160°	per gallon	0	1	8		
Copper	per ton	47	13	9		
" Sulphate	"	16	5	0		
" Oxide (copper scales)	"	44	10	0		
Glycerine (crude)	"	26	0	0		
" (distilled S.G. 1250°)	"	40	0	0		
Iodine	nett, per oz.	0	0	7 1/2		
Iron Sulphate (copperas)	per ton	1	10	0		
" Sulphide (antimony slag)	"	2	0	0		
Lead (sheet)	"	14	12	6		
" Litharge Flake (ex ship)	"	17	0	0		
" Acetate (white	"	23	0	0		
" brown	"	17	0	0		
" Carbonate (white lead) pure	"	17	0	0		
" Nitrate	"	20	0	0		
Lime, Acetate (brown) (ex ship)	per ton	5	10			
" (grey) (ex ship)	"	8	0			
Magnesium (ribbon and wire)	per oz.	0	2			
" Chloride (ex ship)	per ton	2	10			
" Carbonate	per cwt.	1	17			
" Calcined Magnesia	per ton	8	0			
" Sulphate (Epsom Salts)	per ton	2	15			
Manganese, Sulphate	"	16	0			
" Borate	per cwt.	2	10			
" Ore, 70 %	per ton	3	10			
Methylated Spirit, 61° O.P.	per gallon	0	1	8		
Naphtha (Wood), Solvent	"	0	2	9		
" Miscible, 60° O.P.	"	0	3	6		
Oils:—						
Cotton-seed	per ton	16	10	0		
Linseed	"	16	10	0		
Stearine	per ton	22	0	0		
Phosphorus (yellow)	per lb.	0	2	2		
" (red)	"	0	2	8		
Potassium (metal)	per oz.	0	3	7		
" Bichromate	nett	per lb.	0	0	4 1/2	
" Carbonate, 90% (ex ship)	per ton	16	10	0		
" Chlorate	per lb.	0	0	3 1/4		
" Cyanide, 98%	"	0	1	1		
" Hydrate (Caustic Potash) 90 %	per ton	23	10	0		
" (Caustic Potash) 75/80 %	"	19	15	0		
" Potash Hydrate Liquid 50 %	"	11	5	0		
" Nitrate (refined)	per cwt.	1	1	6		
" Permanganate	per cwt.	3	15	0		
" Prussiate Yellow	per lb.	0	0	6		
" Sulphate, 90 % (ex ship)	per ton	9	15	0		
" Muriate, 80 % (do.)	"	8	10	0		
Silver (metal)	per oz.	0	2	2 1/2		
Sodium (metal)	per lb.	0	2	9		
" Carb. (refined Soda-ash) 48 %	nett	per ton	4	15	0	
" (Caustic Soda-ash) 48 %	"	4	15	0		
" (Carb. Soda-ash) 48%	"	4	15	0		
" (Alkali) 58 %	"	3	15	0		
" (Soda Crystals)	"	2	15	0		
" Acetate (ex-ship)	"	10	10	0		
" Arseniate, 45 %	"	14	10	6		
" Chlorate	per lb.	0	0	4 1/2		
" Borate (Borax)	net, per ton	14	15	0		
" Bichromate	per lb.	0	0	3 1/4		
" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	"	8	1	0		
" (74 % Caustic Soda)	"	8	1	6		
" (70 % Caustic Soda)	"	7	1	6		
" (60 % Caustic Soda)	"	7	1	6		
" (pure liquor 90° Tw.)	"	3	1	6		
" 77/78 % powdered (99 % hydrate)	"	12	1	0		
" Bicarbonate	"	6	1	0		
" Hyposulphite	"	5	1	0		
" Manganate, 25%	"	15	1	0		
" Nitrate (95 %) ex-ship Liverpool	per cwt.	0	1	6		
" Nitrite, 98 %	per ton	26	1	0		
" Phosphate	"	9	1	0		
" Silicate (glass)	per ton	4	1	0		
" (liquid, 100° Tw.)	"	3	1	0		
" Stannate, 40 %	per cwt.	3	1	9		
" Sulphate (Salt-cake)	per ton	0	1	0		
" (Glauber's Salts)	"	1	1	0		
" Sulphide	"	6	1	0		
" Sulphite	"	5	1	0		
Strontium Hydrate, 100%	"	10	1	0		
Sulphocyanide Ammonium, 95 %	per lb.	0	1	5		
" Barium, 95 %	"	0	1	4		
" Potassium	"	0	1	6		
Sulphur (Flowers)	per ton	7	10	0		
" (Roll Brimstone)	"	6	10	0		
" Brimstone: Best Quality	"	4	10	0		
Superphosphate of Lime (26%)	"	2	5	0		
Tallow (Beef)	"	18	10	0		
Tin Crystals	per lb.	0	0	4 1/4		
" English Ingots	per ton	65	10	0		
Zinc (Spelter)	"	17	18	9		
" Chloride (solution, 100° Tw.)	"	5	10	0		
" Sulphate, Crystal	"	5	15	0		

THE CHEMICAL TRADE JOURNAL

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Contents.

PAGE	PAGE
Low Flash Oils Condensed	311
Steel Process.....	306
ies	306
Complete Speci.....	307
.....	307
rade	307
Rand	307
Industry	308
ification Works	309
Carbide Notes	309
and the Rhodin	310
span	311
Trade Notes	312
Tar and Ammonia Products	312
Miscellaneous Chemical Market	312
Report on Manure Material	317
Liverpool Oil and Colour Market	313
Hull Paint, Oil, and Colour Report	313
West of Scotland Chemicals	313
Tyne Chemical Report	313
New Companies	313
Gazette Notices	314
Imports	314
Exports	317
Prices Current	320

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CURRENT TOPICS.

DYNAMITE IN THE TRANSVAAL.

MATTERS have become rather mixed regarding the
dynamite monopoly in the Transvaal. Allegations and
denials have followed each other with the rapidity of a Win-
chester repeater or a Mitrailleuse. If it were possible to take
the various statements as trustworthy it would not be diffi-
cult to arrive at an opinion as to the rights and wrongs of
the dispute, but the utterances of the rival parties need such
careful scrutiny and interpretation that it is almost impos-
sible to arrive at sound premises, to say nothing of sound
conclusions. There is much wisdom and foresight, however,
in the recent remarks of the President of the Volksraad, in
which he points out that the present agitation is more likely
to result in the extinction of the dynamite industry than the
desired reduction of price. There can be no doubt as to the
importance of keeping the country independent as regards
the supply of dynamite. Dear dynamite is better than none
at all. Whether the best policy would be that of assuring
support to the manufacturing company in return for reason-
able reductions in price is another matter. At all events, it
is certain that feeling runs very high on the question. Dr.
Leyds does not inspire confidence by refusing to give a defi-
nite answer to the oft repeated question of whether he is in
receipt of a pension from the local company or not. It is
evident that the parties are about equally balanced, for the
resolution authorising a full inquiry was only carried in the
Volksraad by one vote—14 voting for the resolution and 13
against. Now that this point has been carried, the State
Attorney and other legal advisers have been ordered to
investigate matters and report on the steps to be taken to
provide the mines with cheaper dynamite. Not unnaturally
it is thought that this end can be reached by allowing the
importation of dynamite, by permits, on payment of duty.
The report of the executive committee should be very
interesting reading—when it appears.

LETTING IN THE DAYLIGHT.

In our columns this week there is a most refreshing report
of an inquest resulting from a fatality with low-flash oil.
Though the efforts of disinterested scientists to establish the
truth about safe and unsafe oils are now beginning to bear
fruit, in spite of powerful though isolated opposition, it is
pleasing to find that the very producers of the dangerous oils
are becoming so slack and disheartened that they are uncon-
sciously condemning their own evidence in favour of the
dangerous oil. Up to now they have told their own story,
but lately things have crept out which show the real cause
for their strange attitude, and tell quite a different story.

Great efforts were made to frighten our Parliamentary
Committee about the scarcity of crude oil. Now the game is
up. An American contemporary that has fought for low-
flash oil from the first, admits that the oil trade has faced

similar positions before, and will always do so from time to time. Low prices check the production of crude and increase the consumptive demand. Gradually prices rise owing to shortage, and then the search for crude is stimulated. This alternation has been going on for years. Each time an oil famine has been foretold, but it has never come. Thus the recent shortage was but the recurrence of a familiar *status* in the oil market. Good care was taken to keep all this back from our Parliamentary Committee, however. The American evidence was calculated to give the impression that the producers had exhausted their wits and their oil. Then, again, much was made of the ever rising export demand, which made "export oil" a necessity if the demand was to be met. Now we learn that "the demand for export has been larger during the past nine months, but a steady increase cannot be counted on." No doubt the cheapness of petroleum accounted for the sudden increase referred to.

Lastly, what an eye-opener is the following sentence—"An advance in price of two cents per gallon on refined would exclude our oil from some countries altogether, and decrease our sales in others." This, then, was the cause for all the philanthropic vapouring about not raising the price of the poor man's light. It could be raised specially for him directly the low-flash scare was squelched, but at that moment the cat was jumping another way. Yet it was with the greatest difficulty our Committee could be persuaded that these smooth-tongued humbugs were not wholly animated by an honest desire to benefit the British poor.

All of which shows how nearly our Committee were hood-winked, and what a narrow escape British oil consumers had from being led into another American oil boomer's booby-trap.

EDISON'S IRON AND STEEL PROCESS.

FOR some years past Mr. Edison has been engaged in devising methods of treating the poorer iron ores of the mineral districts in the States of New York, New Jersey, and Pennsylvania, with a view to their economical employment in the production of iron and steel. The object was to eliminate the foreign admixtures, including the large proportion of phosphorus contained in these ores, and thus save the cost of carriage. Experimental plant on an adequate scale has been established in New Jersey, and it is stated that success has at last been achieved. The original ore is crushed, sifted, and compressed in briquettes. Originally containing only about 20 per cent. of iron, the material in its finished form has been shown to give from 67 to 68 per cent., and only from '028 to '033 per cent. of phosphorus is left in it. The briquettes are, it is stated, easily reduced in the blast furnace, and confident expectations are entertained that the iron industry of the Eastern States may now be placed in as favourable a position, so far as the supply of raw material is concerned, as that of any other part of America. The *Iron Age* says that the iron trade will watch further developments of Mr. Edison's process with the keenest interest. It is added: "Now that the Edison plant has passed beyond the experimental stage, the question is uppermost what influence the enterprise is likely to exert upon the future of the American iron trade. Let it be noted at the outset that from the standpoint of Mr. Edison and his associates it is not a question alone of the success of the individual plant. The plans reach further than that. There is in contemplation a works four times as large at a more favourable location, with others to follow. In other words, Mr. Edison and his associates are convinced that they will be able to assure to the Eastern iron trade an ore so cheap, and of such quality, physically and chemically, that the producers east of the Alleghany Mountains and north of the Potomac may be able to hold their own and develop in spite of the advantages which the iron and steel makers in the Central West and in the South possess. It is, of course, a problem of quality and cost of the raw materials, of assembling them, and of the delivery of product to the markets. In the matter of labour the Eastern iron maker has a slight advantage, which is now counterbalanced by more modern and elaborate equipment in the West. The assurance of a bright future would quickly place the Eastern works on an equality as to the latest plant, since that is merely a question of capital, which will be forthcoming if the capacity to compete is established."

Reports of Companies.

CAPE ASBESTOS COMPANY, LTD

THE fourth ordinary general meeting of the Cape Asbestos Co., Ltd., was held on Wednesday at Winchester House, Old Broad-street, E.C., Mr. L. Breitmeyer (chairman of the company) presiding.

The Chairman said: I am sorry to say that the balance-sheet and accounts show that our hopeful anticipations have not been realised, and that we have to report another year of disappointment. The accounts disclose a gross loss of £8,700. A sum of £3,500. has been set aside as a reserve against a possible depreciation in the value of the stock on hand; so that really we have made a nett loss of £5,200. on the turnover of last year. This loss results from the fact that, although our goods are becoming more known and their excellence more recognised, we have not been able to push our sales to such a figure as to leave a margin on the rental, salaries, and administrative expenses which our establishments in London, in Italy, and at the Cape demand for maintenance. You will see that the gross profit comes to about £4,000. on the turnover. Our sales for the year are about £14,000; so unless we can nearly double them, say to about £25,000., we shall not be able to make both ends meet. Of course, the directors pay every attention to decreasing the salaries and administrative expenses, and some saving has been effected this year, while, on the other hand, we use our best energies to increase our turnover. Although it is very little consolation, you will be glad to hear that we are not going backwards in our sales. The volume of our trade is increasing; but the improvement is slow. Anyhow, it is a hopeful sign that, with patience, we may ultimately succeed in working ourselves into a better position than we are in to-day. With these few remarks I formally move the adoption of the report, balance-sheet, and accounts.

Mr. B. Seimert seconded the motion.

Mr. Tahourdin complained that the report was only brought down to December, 1896. None of the company's works were more than about three weeks' journey away, and it appeared to him that it was a very unsatisfactory thing to give in November, 1897, a report only to December, 1896. The chairman had given no indication of what had been done in 1897. The gross profit was £4,167., while the London expenses alone were £4,456., and under such management he did not see how the company could arrive at a successful issue. He saw no reference in the accounts to salaries of directors.

A Shareholder asked for some explanation about the French company.

The Chairman said it was true that the meeting was held rather late in the year; but the audited accounts from the Cape were not received until about July. The mines were in a very inaccessible part of the country, some distance from railways and towns, and, of course, until the accounts were received and verified, they could not be submitted to the shareholders. The directors had not received any fees whatever since the formation of the company, and at the last meeting the chairman stated that they would not take any until the company was in a position to pay dividends. The French company was formed two years ago. Their last year's report showed that they had made a small profit which they had written off against expenses connected with the formation of the company. He had not heard from them lately, but he did not think they would make a profit this year. Still, the sales were increasing, and it was hoped that in time it would be a flourishing concern. The administrative expenses for this year would be somewhat reduced. On the other hand, the sales up to the end of October appeared to be about the same as last year—roughly, £8,000. The engineers' strike was a very damaging factor, so far as the sales were concerned, and if it had not been for that strike he had no doubt that the company would have done much better in England. Now that there was a prospect of a speedy termination to the strike, they had received increased orders. In Italy the sales for nine months to the end of September were as much as for the whole year 1896.

Mr. Tahourdin said the report gave no details as to where the gross profit came from, and he thought the shareholders should have accounts from the various branches.

The Chairman said he did not think it would be in the interest of the company to disclose the details of the sales.

The resolution was unanimously agreed to.

PHOTOGRAMS OF 1897.—This annual, which aims at representing the pick of photographic pictures, thrives well under the enterprising editors, namely the editors of *The Photogram*, assisted by Mr. Gleeson White. As usual, the get-up is first-class, and, if anything, the selection more satisfactory than in either of the two previous issues. It is a compilation that cannot fail to inspire true lovers of photography, and should, therefore, meet with wide appreciation.

The Patent List.

list is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of E. Davis and Alfred R. Davis, who report professionally value of Chemical Patents.

NOTIFICATIONS FOR ENGLISH LETTERS PATENT.

Patents in Anodes and the Electro-deposition of Nickel, etc. Engin and Co., Ltd., and G. A. Boeddicker. 24,865. October 25.
Zinc Sulphide Ores. B. Mohr. 24,696. October 25.
Soap. E. Wilczynski. 24,773. October 26.
Soap. G. H. Evans. 24,779. October 26.
Carbonates. J. C. Mewburn. 24,793. October 26.
Soap. J. Stockhausen. 24,868. October 27.
Copper Chemically. Sir T. G. F. Hesketh. 24,875. October 27.
Deposition Apparatus. A. F. Harris. 24,834. October 27.
Hydrogen. G. T. Tugwell. 24,932. October 27.
Preparation of Carbonic Acid. H. S. Elworthy. 25,007. October 28.
Gases. Kirkham, Huelt, and Chandler, Ltd., and S. Hersey. October 28.
Phenate Compound for Scouring, etc. E. M. Taylor. 25,042. October 29.
Gas Generator. G., H., and S. H. Hawkins. 25,084. October 29.
Furnaces. J. E. Slack. 25,118. October 29.
Stop Valves for Chemical, Fluids, etc. D. S. Inman and E. M. 25,239. October 30.
Separation of Metals. H. von de Linde. 25,246. October 30.

ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

Abstracts are specially prepared for the Chemical Trade Journal, RIGHTS of publication are RESERVED. This is the earliest abstracts of Chemical and allied patents accessible to the

Patents in Processes for the Manufacture of Certain Metals and Alloys, especially for the Manufacture of Magnesium and its Alloys. Redotte, 12, Boulevard Bonne, Nouvelle, Paris. Eng. Pat. 21,976. October 25, 1896.

In case of infusible minerals the magnesium is extracted as

The fusible minerals have first to be dehydrated in a special

With magnesium chloride alone a given quantity of metal chloride is added, and the mixture dried below 100° C. The mixture is then fused, the ammonium chloride being driven off. The fused mass obtained in this way, or by the direct fusion of the dehydrated compound, is decomposed in a special electrolytic cell. The anode is adjustable and surrounded with a sheath of metal from the gases given off. The cathode is an agglomerate, such as is obtained in the "Street" electric furnace. Inert electrodes are introduced into the furnace. The chlorine given off is used in the molten metal collects on the surface of the fused mass, and can be drawn off as required. Special precautions are taken for treating sulphates. In forming alloys, chlorides of the metals are fused together. There are eight drawings illustrating the apparatus employed.

Patents in the Manufacture of Resinous Soap and Apparatus therefor. F. Arledter, Perlen, near Lucerne. Eng. Pat. 19,429. August 23, 1896.

The main object is to deal with the lather that ascends in the boiler during its stirring action by means of knives, which cut it, and the gases generated in boiling. The small particles of resin produced by the lather are also melted by a number of hot plates, and are slotted to give a large surface. The mechanical arrangement is described in full, and their use further explained by the aid of drawings, showing the general disposition of the fittings and their

Patents in the Purification of Aluminium. P. E. Placet, 18, Rue de Rochereau, Paris. Eng. Pat. 28,727. December 15, 1896 (under International Convention, July 24, 1896).

To overcome the drawbacks attending the use of nitrate of potash for aluminium, other highly oxygenated salts, such as bichromates and permanganates, are employed. The molten metal is treated with a solution of potash in a magnesia-lined crucible. The salt, by liberating oxygen, which oxidizes the impurities. If a solvent, such as chlorides, chromates, or fluorides, can be added to flux the slag, but it is not always necessary or to the process. In the case of bichromate of potash, for the neutral chromate is formed, and this acts as a solvent as formed by the decomposition of the bichromate. The small amount of chromium which passes into the aluminium is not at all, but usually desirable. The amount present depends on the

rate at which the purification is conducted. The longer the time the greater the amount of chromium. Among the compounds suggested as suitable for the purpose are bichromates of soda, magnesia, lime, manganese, nickel, zinc, or molybdenum; permanganates, chlorates, and nitrates (save those of potash soda and ammonia) may also be employed.

Improvements in the Manufacture of Varnish. J. E. and C. S. Bedford, both of 27, Kirkstall-road, Leeds. Eng. Pat. 19,736. August 27, 1897.

The varnish is prepared from gum Kauri, without previous fusion of the gum, a step which is generally troublesome and wasteful. The process depends on the fact that the fatty acids of castor or linseed oil will dissolve the gum. The fatty acids are obtained by saponification of the oils. The general process may be described thus:—A steam-jacketed, enamelled iron vessel, fitted with an agitator, is used, and into it 200 lbs. of powdered gum Kauri and 100 lbs. of oil acids (obtained by thoroughly saponifying Baltic linseed oil) are introduced. The mixture is heated to 125°C. for 4 to 6 hours by means of the steam jacket. When thoroughly melted the mass is let down by running in a heated mixture of 700 lbs. of turpentine, 100 lbs. of drying oil, 200 lbs. of resin spirit, and 100 lbs. of petroleum spirit. This mixture is thoroughly stirred in for an hour, and then run off to the clarifiers, from whence the varnish can be drawn for use.

THE MERSEY SALT TRADE.

FROM the official returns just published, it is apparent that October proved more satisfactory than the previous month, though there have been serious fallings off in some markets, which, however, have been almost counterbalanced by increased shipments to others. The quantity shipped was 45,827 tons, against an average of 49,992 tons for the past ten years, or 45,195 tons during the past five years. The great reductions in shipments are to the United States, owing to the re-imposition of the duty, as shown by the following figures:—18,840 tons for October, 1895; 14,099 tons, 1896; and 3,794, in 1897. Although the prospects seem somewhat better for the present month, they are far from bright as compared with the past two years. The shipments to South America, East Indies, and Africa, have been satisfactory. The coast-wise shipments have been fair, more especially those to Ireland. The fishery is becoming annually better, and the prospects seem pretty good. The shipments of white salt from the respective ports for October were:—Liverpool, 40,861 tons; Runcorn and Ship Canal, 2,086 tons; and Weston Point, 2,880 tons; whilst the quantity of rock salt was 3,493 tons from Liverpool, and six tons from Runcorn and Ship Canal. Compared with last year, there have been increases of 4,573 tons from Liverpool, and 564 from Weston Point, whereas there has been a decrease of 1,967 tons from Runcorn and the Ship Canal.

GOLD OUTPUT IN THE RAND. YET ANOTHER RECORD.

THE output from the Rand district during October, as cabled by the Witwatersrand Chamber of Mines, amounts to 222,140 ozs. This total, however, is exclusive of the returns of several companies which, under the title of the "Association of Mines of the South African Republic," give their joint output as 52,035 ozs. The month's production is, therefore, 274,175 ozs., and shows an increase of 12,025 ozs. as compared with the previous total, and an increase of 74,286 ozs. as compared with the corresponding month of 1896. The following table gives the monthly returns since the beginning of 1894:—

	1894.	1895.	1896.	1897.
	OZ.	OZ.	OZ.	OZ.
January	149,814	177,463	148,178	209,832
February ...	151,870	169,295	167,018	211,000
March	165,372	184,945	173,952	232,067
April	168,745	186,323	176,707	235,698
May	169,773	194,580	195,008	248,305
June	168,162	200,941	193,640	251,529
July	167,953	199,453	203,873	242,479
August	171,977	203,573	213,418	259,603
September ..	176,707	194,764	202,561	262,150
October	173,378	192,652	199,889	274,175
November ..	175,304	195,218	201,113	—
December ..	182,104	178,428	206,517	—
Total ..	2,024,159	2,277,635	2,281,874	2,426,838

RUSSIAN PETROLEUM PRODUCTION.—The Baku manager of the European Petroleum Company, Limited, reports that the production for the last week was 165,512 poods, or 2,668 ton.

SOCIETY OF CHEMICAL INDUSTRY.

LONDON SECTION.

At the opening meeting last week a paper on the "Adulteration of Portland Cement" was read. It contained the results of work deputed to Messrs. Stanger and Blount by the Cement Trade Section of the London Chamber of Commerce. Briefly stated, it was proved that the addition of Kentish ragstone really acts as a diluent of good Portland cement, although some makers had claimed that it was an improvement. The ragstone is a siliceous carbonate of lime, and any apparent improvement in cement containing this native limestone was shown to be due to its finer pulverulent condition filling up the interstices. Some photo-micrographs prepared by Mr. Herbert Jackson, of King's College, showed this property of Kentish ragstone very clearly. A still more objectionable adulterant is blast-furnace slag, but the Chamber of Commerce has met all these impurities by enunciating the following definition which, it is suggested, should be insisted upon by engineers, architects, contractors and others: "That Portland cement be defined as a mixture of two or more suitable materials, intimately and artificially mixed in requisite proportions, and afterwards properly calcined and ground, to which nothing has been added during or after calcination, excepting that an addition, not exceeding two per cent. of gypsum, is permissible for the purpose of regulating the setting." It was further suggested that articles not answering the above description should not be sold as Portland cement, but under some other distinctive name. The addition of gypsum is allowed in order that in summer the cement should not set too quickly. In the discussion all sorts of opinions were expressed, the most important criticism coming from Mr. Hehner, who frankly admitted the impossibility of saying whether the sulphate was natural to the cement or due to adding gypsum.

Mr. H. K. Bamber suggested that finer grinding of the cement itself would provide a fine filling, which would answer better than any extraneous material, such as ragstone. With regard to the aeration of cement, Mr. Matthews stated that it had been found in connection with the Dover Harbour works now in progress, that turning the cement six times increased its bulk by 6 per cent. The turning cost 2d. per ton per time; while the gain in volume in six turnings represented, with cement at 36s. per ton, an increase in value of about 1s. 6d. per ton, or a net gain to the contractor of about 6d. per ton of cement used. Mr. Needham White, the Chairman of the Committee of the Chamber of Commerce, was of opinion that when cement and ragstone were ground together, the particles of ragstone became considerably finer than those of the cement, and that consequently the ragstone proved to be a good filling material. Dr. Messel put the query, which habitually crops up in discussions on Portland cement, as to why manufacturers did not adopt means for turning the cement mechanically, with a view to hastening aeration. He was informed that "aeration" was not merely an absorption of water and carbonic acid, but that time was a function in the process.

The remaining item was the description of an improved adjustable drip-proof Bunsen by Dr. Evans. The meeting was well attended, and suggestive of a useful session, although the secretary would be glad of some more papers.

LIVERPOOL SECTION.

The opening meeting of the present session was held in the University College, when the chairman, Dr. Chas. A. Kohn, gave an address on "The manufacture and properties of carborundum." Carborundum was discovered by Mr. E. G. Acheson, of Monongahela, Pennsylvania, in 1891, in an attempt to obtain diamonds by heating a mixture of carbon and clay in the electric furnace (vide *C.T.J.*, Nos. 330 and 338). It was made in an improved form of electric furnace in which a mixture of coke and sand, to which a little sawdust and salt are added, is heated to a temperature about that of the electric arc—3,500 degrees Centigrade. The product obtained from the furnace consisted of an amorphous form of carbide of silicon, as yet a valueless product, in addition to the carborundum. The most valuable property of the carborundum was its extreme hardness, being next to that of the diamond. In addition it is incombustible and infusible. Its chief use is as an abrasive, either in the form of powder or as wheels. In various forms carborundum was used in the iron and steel industries, in the manufacture of pottery and porcelain, for polishing granite, valve grinding, finishing leather goods, especially boots and shoes, and for finishing hides. The address was fully illustrated by specimens, diagrams, and lantern slides, for which Dr. Kohn was indebted to the Carborundum Company. A vote of thanks brought the meeting to a close.

MANCHESTER SECTION.

The first sessional meeting of this section was held on Friday, 5th inst., in the rooms of the Chemical Club, when the chairman (Mr. George E. Davis) delivered the opening address.

Reference was made to the loss sustained by the section in the death of the vice-chairman, Mr. Peter Hart, and of Mr. Thomas Jackson, one of the oldest chemical manufacturers of the district, both of whom were original members of the section. In proceeding to his address on the "Recent developments in the Chlorine industry," the Chairman said he had chosen this theme because all the world was looking to see what the results of the new electrolytic processes would be. The address dealt with the advent and progress of the decomposition of common salt by electricity, of the products formed by such means, and the effect the new processes would have on the future of the heavy chemical industry. From his remarks, it appears that the electrolysis of salt was first attempted nearly half a century ago, but failed for want of the perfect electrical appliances we have to-day. The original Watt's cell was then described. Subsequently, the two leading forms of the modern cell were described in detail, and incidentally it was mentioned that the patentees of one form had established large works in Cheshire, and were at the present time turning out over seventy tons of bleaching powder per week, while a second works was preparing to enter the field with another large installation. Mr. Davis stated as his impression, that the electrolysis of common salt was much more costly than generally believed, and only a lengthy experience could determine whether it was possible to make chlorine by electrical methods at less cost than by some of the present chemical methods.

The abnormal state of the chlorine industry was pointed out, and it was shown how the bleaching powder manufacture had to bear more than its proportionate share of expenses owing to the loss on another article that it was necessary to make at the same time—a loss which would be avoided by electrolysis.

The problem was, however, not simply to make bleaching powder and caustic soda, or carbonate of soda at a profit at present selling prices. Prices would most probably fall slowly till next July, and then afterwards the market would drift no one knew where.

Speaking of the unremunerative character of the saltcake trade, the Chairman alluded to the manufacture of bleaching powder by the Weldon process, and gave it as his opinion that, leaving out the loss on saltcake (which some inventor or another may some day overcome), there is no cheaper source of chlorine than the manganese method, the Deacon process not being able to touch it on the score of cheapness.

Reference was also made to the manufacture of bleaching powder by the nitric acid process, for which large works had been erected, and which, including the loss on saltcake, was making bleaching powder cheaper than any other known chemical method.

Some statements published by the late Walter Weldon relative to the future selling price of bleaching powder were traversed by the speaker, who pointed out the extreme gravity of the present crisis in heavy chemicals. It appears that not only have the alkali products lost much of their value, but the volume of British trade in these articles has become so contracted that competition of the keenest nature must arise between even the newest works themselves in order to dispose of their manufactures.

The effect of the electrolytic methods upon the market for alkalies was also discussed, and the instability of the present markets for ammonia soda and caustic soda dilated upon; the Chairman pointing out, however, that some coalition of the leading producers, which is not outside the pale of practical politics, might upset all his calculations, and may become necessary in the near future.

In calling attention to the flood of electrical processes for producing chemicals which is showing signs of flowing in, the Chairman pointed out that, as the master-patents have all lapsed by effluxion of time, only minor improvements can well be protected, and it is doubtful whether many of them will be worth the value of a seal—a fact to be remembered by intending investors. There is such a wide field for ringing the changes on various modifications of plant, which produce the same result in the end, that the Chairman humorously said it was a great pity that some of our old patentees had gone over to the majority. A Weldon, a Gossage, a Deacon, or even a Tessié du Motay, would have made the Patent Office fairly hum.

Referring to the extraordinarily rapid development of the alkali trade in the United States of America, the Chairman instanced the case of the Michigan Alkali Co. at Wyandotte [see also p. 311], which by December 1st will be producing no less than 400 tons per week of high-strength caustic soda; and also that of the Matheson Company, which holds the American patent rights for an electrolytic process. Moreover, America is supplying its own requirements in ammonia soda to a very alarming extent, so that in a very short time producers in England will have some considerable difficulty in disposing of their wares at any price.

In the course of the address, stress was laid on the fact that the Deacon-Hasenclever, the Electrolytic, and the Weldon methods of producing chlorine had all taken about 50 years to reach anything like perfection.

In proposing the usual vote of thanks, Mr. R. Bowman expressed the hope that the chairman had taken too pessimistical a view of the future, and reminded the meeting that it is always the unexpected that

He thought that on the future of the old pyrochemical the last word had not been said yet. They could judge better chemical processes when a few balance-sheets had been pub-

ossmann, in seconding the vote, took much the same view as our speaker regarding the future, for he said it was an old the alkali trade that so long as the Chinese did not wash there it prospects before the alkali maker. He did not think the of electrolytic processes would be as rapid as was imagined t. They were, even yet, all more or less experiments, and of depreciation was so far unknown. There were about 35 present.

GOW SEWAGE PURIFICATION WORKS.

Important extension of the Glasgow sewage purification works inaugurated recently by Lord Provost Richmond, in the of a considerable company of invited guests. The works, at Dalmarnock, in the east end of the city, were opened in 4, and have been nearly three years and a half in operation. site £35,461. was paid, and a further sum of £86,026. was works and machinery, making a total of £121,488. As then on there was a total daily flow of sewage into the works every ur hours of between five and six million gallons, from which s were extracted and the liquid rendered innocuous and y pure by chemical treatment and precipitation. Since then l sewers have been connected with the works, bringing the daily inflow up to about ten million gallons. To cope with ment of this greatly increased volume of sewage, extensions erred upon last March at an estimated cost of about £11,000. nsions consist of 18 precipitation tanks of brick with concrete ch 100 feet by 40 feet, with a water-holding depth of 7 feet. nsions were designed by Mr. A. B. McDonald, the city on the lines of the scheme originally carried out by the late ng, the first engineer of the works, but with improvements l suggested themselves in the course of three years' working ; bring up the total storage capacity from two to five million The Lord Provost, before opening the sluice, said that in the of the works they had been heavily handicapped for a con- time by want of sufficient tank accommodation to allow the o settle thoroughly, and the extensions they had now l would enable them to deal with the purification of the uch more effectually. In Glasgow they were, he believed, e sewage problem successfully, and within a few years all l authorities on the Clyde would have to take the matter up. ith the sewage successfully, and at the same time economic- ist be done on a large scale; and having that before them, ration of Glasgow would gladly afford all the assistance in er to outside local authorities to help them to dispose of their After the inauguration ceremony, the company inspected a filter, through which the purified effluent finally passes before to the river. They also saw in operation the Cumber plant the sludge, recently erected at a cost of over £2,000. This s with the sludge after it has been reduced to 60 per cent of l weight by hydraulic pressure, and in the process of passing evolving cylinders traversed by a current of hot air it is duced to 10 per cent., in which concentrated form it is oose or in bags, for manurial purposes, under the name of the iliser. Formerly, in its pressed or partially wet form, con- diculty was experienced in disposing of the sludge, but it found to meet with a ready market in its dried form. So s the manager of the works as to the success of the process, pressed his firm belief that in two years the Corporation ore than recouped for the outlay on the drying machinery. cost of site and drying plant, the total expenditure on the orks up to date amounts to £134,540, and there is still room sent site for the construction of tanks to deal with an addi- y flow of sewage of about seven million gallons, or seventeen llons in all.

LEUM STORE ON FIRE.—A fire broke out last week at the merican Oil Company's Stores, Birkenhead Docks, and great was experienced by the fire brigade in coping with the finally, the fire was got under, but not before considerable ad been done, and the firemen continued to pour water on ng for some time afterwards.

ALIAN GOLD.—During October the exports of gold from Australia amounted to 75,690 oz., as compared with 71,776 ptember and 27,331 oz. for October last year. The total for n months is 526,736 oz., which compares with 281,265 oz. ole of last year. It will thus be seen that Sir John Forrest's nade when in London, as to the probable export for this year, realised, and that the export for 1897 has already nearly at for 1896.

Legal Intelligence.

HIGH COURT OF JUSTICE.

CHANCERY DIVISION.

Before Mr. Justice Byrne.

COMMERCIAL DEVELOPMENT CORPORATION (LIMITED) v. CASTNER-KELLNER ALKALI COMPANY (LIMITED).

The plaintiffs were incorporated in October, 1897, with the object (among others) of purchasing J. G. A. Rhodin's patent (21,509 of 1896) for an improved electrolyser or electrolytic apparatus. The prospectus of the plaintiff company and forms of application for shares were issued to the public on or about November 3rd inst., and copies of the same were sent to all the leading London and some other newspapers to be advertised on Friday and Saturday, the 5th and 6th inst., the time for application closing on Monday, 8th, at 4 p.m. The plaintiffs came before Mr. Justice Byrne on Saturday, 6th inst., complaining that on the Thursday evening they learned that the defendants' solicitors had sent a letter to the newspapers, whereupon their own solicitors sent a letter. (See this issue, p. 310). At the same time the plaintiffs' solicitors wrote to defendants' solicitors threatening proceedings if the counsel's opinion should appear in print. The publication in the other papers was prevented. The plaintiffs on the 6th inst. moved *ex parte*, under section 32 of the Patents, Designs, and Trade Marks Act, 1883, for an injunction to restrain till over Monday, any further publication of the letter of the defendants' solicitors or the opinion, and the plaintiffs' counsel read a letter from defendants' solicitors in which they said (*inter alia*):—"On our clients discovering that the process is being worked they will at once institute proceedings against any persons or companies who may work under the Rhodin patent."

Mr. Terrell, Q.C., Mr. Astbury, Q.C., Mr. McConkey, and Mr. T. H. Grey appeared for the plaintiffs.

Mr. Justice Byrne refused to grant an injunction on an *ex parte* application, but gave leave to serve notice of motion for an injunction.

The plaintiffs immediately renewed the application before the Master of the Rolls and Lord Justices Chitty and Vaughan Williams, but their Lordships said that it would be wrong to grant such an injunction on an *ex parte* application.

ACETYLENE AND CALCIUM CARBIDE NOTES.

COST AND PRODUCTION.

HITHERTO the main source of supply for Germany and eastern Europe has been the Aluminium-Industrie-Actien Gesellschaft, at Neuhausen-on-Rhine, near the falls of Schaffhausen, which was the first establishment, except one in France, to begin the manufacture of carbides on a large scale by means of electrical heat generated through water power.

This company supplies about 60,000 kilogrammes (132,276 pounds) of carbide annually to the Prussian State railways, where it is used to purify and enrich oil gas for the illumination of railway cars, as well as stations, shops and other buildings. Having control of practically unlimited water power, the company at Neuhausen is steadily enlarging its capacity, and now offers for export carbide of standard quality, capable of producing from 300 to 320 litres of acetylene gas per kilogram (2.2 lbs) subject to the following prices and conditions: Lots of 1 to 1,000 kilograms, 60 centimes per kilogram, equals about £23. per metric ton (2,204.6 pounds); lots of 1,000 to 5,000 kilograms, equals 50 centimes per kilogram, equals about £19. per metric ton; lots of 5,000 kilograms or over, 45 centimes per kilogram, equals £17. per metric ton.

These prices are for the carbide alone at the works in Neuhausen. It is packed for shipment in tin cans or drums, and these, when sold for export, are again inclosed in wooden cases, and for this the following packing charges must be added to the net rates given above. The cans are of three sizes, containing, respectively, 12, 50, and 180 kilograms, equal to 26, 110 and 396 pounds avoirdupois, and are charged to the purchaser of carbide at about 8d.; 2s. 6d. or 5s. each, according to size. For the wooden cases in which the cans are packed, the charge ranges from 5d. per small can to 10d. for the large ones, so that the whole cost for hermetically sealed tin drums and wooden casings would be not far from £3. 5s. per ton of carbide.

These are, so far as can be ascertained, the minimum prices at which carbide can now be obtained.

The following prices are from the Electrochemische Werke, Bitterfeld, whose business offices are at No. 29, Luisen Strasse, Berlin. On small orders the price is about £27. per 1,000 kilograms (2,204.6 pounds); large orders £21. 10s. per 10,000 kilograms (22,046 pounds), and if a large and steady trade were created the price would fall to £19. per 10,000 kilograms (22,046 pounds). These prices are for the calcium carbide loaded in the ship at Hamburg, but do not, however, include packing.

Our Book Shelf.

THE COMMERCIAL USES OF COAL GAS. By T. Fletcher. 104 pp.

This book, which is composed of a collection of articles and papers written or read by the author, is really a supplement to "Coal Gas as a Fuel." It is neatly got up in limp red cloth boards, and well illustrated. It is surprising to find what a number of commercial uses gas has been put to with profit. The following selection gives an idea of the scope of the book, since it deals with the use of gas for bacon drying, conditioning cigars, beer bottling, japanning, lacquering, heating bookbinders' tools, making printers rollers, drying gummed paper, enamelling, disinfecting, pottery printing, the wire cable trade, etc. One of the most interesting facts is that on page 15, which states that lead burning can now be successfully accomplished without hydrogen blow pipes, by using compressed coal gas and a special blow pipe jet.

A HANDY BOOK FOR BREWERS. By H. E. Wright. 2nd Edition, 316 pages, with index. Illustrated. London: Crosby, Lockwood, and Son. 1897.

This book is certainly one of the handiest of modern comprehensive works on the art of brewing and malting. It deals with malting, the qualities of brewing waters, hops and sugars, the chemistry of brewing, and describes the technical steps in the preparation, barreling and bottling of beers. There is a good chapter on yeasts, in which a few changes are noticeable in the second edition. The brewery and its plant is dealt with in detail, and it is rather surprising to find this section stands substantially the same as it was first written in 1892. The arrangement of the book is excellent. The improvement of the synoptic table of brewing processes is the most important change that has been made in this new edition.

ORGANIC CHEMICAL MANIPULATION. J. T. Hewitt. 260 pp. with index, and 63 illustrations in text. London: Whittaker and Co. 1897. 7s. 6d.

The wants of advanced students of organic chemistry are abundantly met by German books on this subject, but so far there are not very many good laboratory handbooks in English. One of the best of these—a translation from the German—has been noticed in these columns, but it was pointed out that the translation was not wholly satisfactory. The lines on which the present book is formed are much the same as those which characterise the German work referred to, but this does not make it any the less welcome, being rather a recommendation than otherwise.

The first part of the book is devoted to organic analysis and general methods of preparation. The second part is comprised of a systematic collection of definite preparations, intended to be conducted on a quantitative scale. The illustrations are very good, and in many cases original. The book has a distinct educational value apart from its qualifications as a guide to technical skill in methods of preparation and organic analysis.

A COURSE OF PRACTICAL CHEMISTRY. Part I. Elementary. By M. M. P. Muir. 319 pp., with index. 37 Illustrations. London: Longmans, Green, & Co. 1897. 4s. 6d.

This is the first part of a complete student's handbook of practical chemistry, based on the author's experience as a teacher. The first part is divided into three sections, which are subdivided into lessons composed of experiments and exercises thereon, much after the style of Valentine's old and familiar text book.

The first section covers chemical change, the preparation of compounds, and the re-actions of acids, alkalies and salts. The arrangement of the paragraphs and the selection of type are both conducive to precision and easy reference. Section II. deals with volumetric work on the acids, alkalies, and other easily determined compounds. Qualitative analysis is not touched until Section III. is reached.

It will thus be seen that the system is comparatively novel, and we are inclined to think commendable. All the experiments are carefully and minutely described, and couched on the modern principles of deductive teaching. In Section III., the idea of using black type in formulæ to indicate solids (as introduced by the author in earlier books) is again utilized with advantage, as the precipitate resulting from a re-action is recognised by the student at once.

If the other two parts of the work are as complete, clear, and well conceived as the first it will constitute one of the most valuable contributions to teaching literature that have been made. All the organisation in regard to the teaching of chemistry is ready to the hand of the teacher; he has but to expound. If possible, such a book

tends to make the teacher more or less a machine, but no one save the educational "crank" will object to submit to the demands of such a delicately organised and highly executed piece of mechanism as the teaching system adopted by the author. The book is, of course, intended to be used in conjunction with a course of lectures or demonstrations. We have no wish to be hypercritical, but the illustrations are weaker than the general style of the book would lead one to expect. While finicking detail is undesirable, the crudity of some of the sketches does not harmonise with the author's desire to check slipshod work by carefully detailing experiments and avoiding superficial directions. Original and natural sketches have a stimulating effect on the constructive abilities of a student. Sketches like those on pages 27 and 49 have the opposite effect.

CATALOGUES. *Scientific Apparatus, &c.* Baird and Tatlock, 14, Cross-street, Hatton Garden, E.C.

This catalogue is well got up in blue cloth boards, and contains 488 pages, with 1,930 illustrations. The chief features are the extended sections devoted to apparatus specially suited for bacteriological work, physiology, water, oil, and milk analysis. Gas analysis is also a good section, and contains illustrations of several modern pieces of apparatus. There are also several other novelties scattered up and down the catalogue that should be noted by analysts and teachers.

Introduction of Electric Light into England.—This is the title of a short historical review of this subject, prepared by the Edison-Swan United Electric Light Co., of Queen-street, E.C., and 53, Parliament-street, Westminster, &c., as a memento of their exhibit at the Imperial Victorian Exhibition at the Crystal Palace this year. It contains several excellent photos of the exhibit and the founders of the company, as well as particulars of the company's productions.

THE CASTNER-KELLNER AND THE RHODIN PATENTS.

THE following correspondence appeared in the "Money Column" of the *Times* last week:—

"117, Cannon-street, November 4.
"Sir,—Referring to the prospectus of the Commercial Development Corporation (Limited), formed with the object (*inter alia*) of purchasing Mr. J. G. A. Rhodin's Patent Improved Electrolyser, the directors of the Castner-Kellner Alkali Company (Limited) hereby inform the public that they are advised by Mr. Moulton, Q.C., Mr. Bousfield, Q.C., and Lord Robert Cecil that the apparatus described and claimed therein will constitute an infringement of their patent rights if used for the making of alkali in the United Kingdom. A copy of the opinion of counsel is annexed. We are instructed to give notice that the Castner-Kellner Alkali Company (Limited), who are the owners of the patent referred to in such opinion, will institute proceedings against any person so using the Rhodin apparatus, so soon as any attempt is made to employ it for the manufacture of alkali in the United Kingdom.—We are, Sir, your obedient servants,

"BAKER, BLAKER, AND HAWES,
"Solicitors to the Castner-Kellner Alkali Company (Limited).
(Copy of opinion.)

"We have considered the apparatus described in the complete specification to Rhodin's patent, No. 21,509 of 1896, and claimed therein, and we are of opinion that the user of such an apparatus for the manufacture of alkali in the United Kingdom would constitute an infringement of the Castner patent, No. 16,046 of 1892.

"J. FLETCHER MOULTON.
"W. R. BOUSFIELD.
"ROBERT CECIL."

"November 3rd, 1897.

We (the *Times*) have also received the subjoined communication with reference to this matter. Its character has surprised us. We cannot, of course, pretend to decide between the assertions of the two parties to this dispute on a highly technical point, but it is our duty to put the public in possession of the fact that such a dispute exists:—

"17, Water-street, Liverpool.
"Sir,—We understand you have letter from the Castner-Kellner Alkali Company (Limited) for insertion, with opinion of Mr. Moulton, Q.C., advising that the Rhodin patent is an infringement upon their—Castner or Kellner opposed Rhodin patent in Germany, and was defeated. Have instructions to commence proceedings at once if such publication takes place.

"WRIGHT, BECKET, AND CO.,
"Solicitors for the Commercial Development Corporation (Limited)."

It is understood that the Commercial Development Corporation, Ltd., have now forced the Castner-Kellner Alkali Company, Ltd., to bring their action for the alleged infringement of the Castner patent.

[See also Legal Intelligence, p. 309.—ED. C. T. J.]

THE COALFIELDS OF JAPAN.

THE falling off in the yield of the coal mines is causing serious uneasiness in the public mind in Japan, because of the difficulties it puts in the way of the native industries. The price of coal, indeed, has for some time past been increasing almost from day to day, and if that state of things continues a good many factories will have to be closed. So long as Japan (as is still the case with China) was willing to limit itself to the prosecution of its own native industries, all of which were based upon manual labour and upon the extraordinary cheap scale on which they were worked, the commercial affairs of the empire went on very well. But a time came when the Japs, having administered a severe chastigation to her unwieldy neighbour, thought that nothing could resist them in future in any field of action whatever. And really for a little time it certainly did seem as if there was solid ground for these aspirations. Fortunately, however, for other nations, Japanese ambition finds itself somewhat nipped in the bud by the falling off in the output of the Kiusiu coal mines. The two principal coal-mining centres of the Japanese empire are those of Kiusiu and Hokkaido. The decrease in the production of the Kiusiu mines is a matter of immense importance for Japanese manufacturers, in spite of the efforts made to increase the output at the Hokkaido mines and the sinking of new mines in the north. The Hokkaido coal basin is divided into three principal portions, one belonging to the Hokkaido Railway and Mining Company, and the other two to the Iwami and the Kushiro Mining Companies. The annual output of the mines belonging to the Hokkaido Railway and Mining Company is now about 640,000 tons, which is three times more than it was in 1892; the increase in 1896 over the preceding year amounted to 160,000 or 170,000 tons. The Iwami mines are the property of two capitalists, and do not yield, taking one year with the other, more than about 20,000 tons a year. The output of the Kushiro mines is on the average 30,000 tons per annum. In addition to the above, a few mines are worked in the north-west provinces, notably in the Iwaki district, from whence are derived the Shiramizu coals, the Haragui coals, &c., and which yield altogether about 100,000 tons in the year. These last-named coals, however, are of very inferior quality; they are mostly conveyed to Tokio, and used for the most ordinary purposes. That which is happening to-day at the Kiusiu mines took place two or three years ago at the Akaiwa coalfields in the province of Echigo, when they had to succumb to the competition created by the Hokkaido mines; but their annual output was only about 10,000 tons. This is, of course, a very insignificant figure, but then there is a mine worked at Sakata whose yield is only about 2,000 tons per annum. To sum up, the total annual output of coal in Japan at present is as follows: Hokkaido mines, 640,000 tons; Iwami, 20,000 tons; Kushiro, 30,000 tons; mines in the north-east, 100,000 tons; Echigo, 10,000 tons; Sakata, 2,000 tons; Kiusiu, 200,000 tons; or on the whole, from 1,000,000 to 1,000,000 tons, which is less than 100,000 tons per month. Against this quantity we have to put the home consumption, which of late years has been to the extent of 400,000 tons in the city of Tokio alone, 250,000 tons being derived from the Hokkaido coalfield, and 150,000 tons from the Kiusiu mines. The falling off in the yield of the Kiusiu mines has resulted in an increased demand, amounting to 40 or 50 per cent., upon the Hokkaido mines, but it appears there are signs from recent borings and examination of the seams in the last-named district that the production will soon be slackening. In this case Japan will see herself deprived of one of the principal factors in her prosperity, and will be obliged to obtain from abroad the fuel which is necessary to keep her manufactures going, and these manufactures would then lose one of their principal *raison d'être*, viz., their cheapness, seeing that then they would be saddled not only with the increased cost of imported coal, but also with the heavy expense of its transport.

SOCIETY OF CHEMICAL INDUSTRY IN U.S.A.—TRADE JOURNALS
THANKED—The annual report of Dr. H. Schweltzer, the secretary of the New York Section of the Society of Chemical Industry, has been issued in pamphlet form, under the same cover appearing a revised list of the members of the section. It appears that during the season of 1896-97, 79 members were elected, which makes the number of members in the United States 471. This society, and especially this section, has enjoyed growth and prosperity. During the last session seven general meetings were held. Speaking of the death of the first chairman of the section, Mr. A. H. Wason, the report says: "The interest which he took in every detail connected with the subjects brought before him as chairman or as a member of the committee, never failed to be appreciated by us, and in a great measure the success of this section was due to his indefatigable energy in its interests." Thanks are extended to the *Oil, Paint, and Drug Reporter* and to other drug journals for the reports of the meetings. The first meeting of the society for the season of 1897-98 was held at the New York College of Pharmacy on October 22nd, 1897.

LOW FLASH OILS CONDEMNED.

WHAT A CHANGE WAS THERE!

MR. WYNNE BAXTER, coroner, held an inquiry at the London Hospital, on November 2nd, respecting the death of Sarah Berlovitch, 15, the daughter of a cigarette maker, of 2, Montague House, Montague-street, Whitechapel.

Morris Berlovitch, the father, stated he had been told that about half-past twelve the deceased turned down the wick of a paraffin lamp, which had been alight for about 16 hours. An explosion immediately occurred, and the burning oil set fire to the girl's clothing. After the flames were extinguished she was taken to the hospital, where she died.

The Coroner: Where did you buy the oil?

Witness: At an oil shop in Great Garden-street.

Mr. Butler (L.C.C. inspector): What oil did you use?

Witness: I don't know.

Mr. Butler: What did you pay for it?

Witness: Twopence halfpenny for half a gallon.

The Coroner said unfortunately they had not been able to obtain a sample of the oil, or doubtless Mr. Butler would have been able to tell them that it flashed at a very low point. The fact that the lamp had been alight for 16 hours, as had been stated, would cause the glass to get hot, and the oil that remained would therefore also be heated. This would cause a vapour of a highly inflammable nature to collect in the reservoir, and when the wick was turned down an explosion naturally occurred. He (the Coroner), however, supposed that this would occur no matter what oil was used.

Mr. Butler: Not with an oil of 100 degrees.

A Juror: I say it is quite time that the County Council had power not only to regulate the sale of lamps, but also oil.

Mr. Butler: These cheap oils flash at 74 degrees to 80 degrees Abet test, and are the cause of great mischief.

The jury returned a verdict of accidental death, and added:—"We are of opinion that the sale of dangerous paraffin lamps and low-flash oils ought to be prohibited by statute."

[It seems almost incredible that a L.C.C. Petroleum Inspector could have uttered such words. The agitation of the last two years has worked some wonders. Those inspectors who were so insistent in assuring juries "that no unsafe oil came into London" are eating the leek and no mistake. No doubt they find it very full-flavoured at times.—Ed. C.T.J.]

PROGRESS OF THE MICHIGAN ALKALI CO.

ALKALI DEVELOPMENTS IN THE STATES.

THE new bi-carbonate of soda plant at the No. 2 works of the Michigan Alkali Co. have now been started about 2 months, giving employment to 50 men. These works will have an ultimate capacity of 100 tons of bicarbonate of soda every day as soon as everything is working smoothly. For two or three months the product will be packed in barrels and casks for distribution about the country. Then, when its reputation is established, the soda will be put up in small paper packages ready for the consumer. The entire output will, of course, be sold to wholesalers. When this department is in full operation, work will be given to a considerable number of packers.

CAUSTIC PLANT TRIPLED.

At the lower, or No. 1 works, steps have been taken for an addition to the caustic soda plant that will triple its capacity. The entire output of the present plant is contracted for. So many inquiries have been received regarding the soda, that the company decided to place themselves in a condition to meet the demand. At present, 50 drums of 600 pounds each, are turned out every day. When the new building is completed, the output will be 150 drums daily. The steel drums are made on the premises. The new plant is running now, but none of the product will be placed on the market before Jan. 1st, 1898.

The fine new brick hotel or lodge at No. 2 works which cost £1,600, is now open under the management of John Griffith. The lodge is intended principally for the foremen of the different departments, and contains a large, comfortable reading and lounging room.

A recent addition to the office at No. 2 works, doubling its size, affords one of the most elegant office buildings attached to any manufacturing concern in the Western States of America. The different apartments are fitted up in handsome style. Beautiful floor coverings, electric light and steam heat combine to equip luxurious quarters. The office has its own private telegraph and telephone wires, with an operator in charge. The laboratory, on the second floor, is equipped with every convenience.

Following out the company's policy of giving attention to the aesthetic as well as the practical, a landscape gardener will be attached to the upper office. A large lawn is to be laid out surrounding the office and lodge, dotted with flower beds. A greenhouse will also be erected.

Trade Notes.

Obituary.—It is with regret we learn of the death of Mr. Thomas Webb, of Pendleton, at the age of 80. Mr. Webb was very well known as a maker of glass retorts for the chemical trade, in the early days of which his productions were much sought after.

NITRATE STATISTICS.—The Permanent Nitrate Committee, in its statistical circular for November, states that the total export of nitrate of soda to Europe in October was 2,658 000 quintals; loading for Europe, November 1st, 1,945,000 quintals. Imports into Europe, October, 6,100; deliveries, Europe, October, 40,810; visible supply, Europe, November 1, stocks and afloat, 501,720 tons.

THE SACCHARINE PATENT DISPUTE.—In the Chancery Division of the High Court of Justice, on Thursday, before Mr. Justice Romer, in the case of The Saccharin Corporation, Limited, v. The Chemical and Drugs Company, Limited (which carries on business in Hope-street, Manchester), a motion for an interim injunction was directed to stand over till Friday week. The action is a patent action relating to the manufacture of saccharine, and the defendants are the agents of people living abroad. It is alleged the defendants have sold articles which infringe the plaintiffs' patent.

CHANGES IN THE AMERICAN PATENT LAW.—Mr J. C. Chapman, Fel.Chart.Inst. of Patent Agents, calls attention to some important changes in the American Patent Law which, by an Act of Congress, will come into force on the 1st of January next. Hitherto an inventor could always obtain an American patent if he applied at any time during the life of his English or foreign patent for the same invention, provided such invention had not been in public use in America for more than two years before his application. This was a most generous law. Under the new Act, however, an inventor will not be able to obtain a United States patent for an invention unless he applies within seven months from the date of his application for his English or other first foreign patent for the same invention. Those who now have English or foreign patents granted for any invention, therefore, have still time to obtain, if they so desire, a United States patent for the same invention; but they must apply before January 1st, 1898, in order to protect the invention under the provisions of the present law. They will lose the right when the new law comes into operation. If, therefore, inventors here have not already applied, and desire protection in America, they must act at once.

TECHNICAL OBJECT LESSONS.—"Object-lessons" appear to be in favour with the Technical Education Board of the London County Council, for in its new regulations regarding aid to schools of art and evening art classes it specially, and for the first time, recommends technical art schools to provide themselves with flowers, branches of foliage, and stuffed birds, or photographs and other illustrations of animals, birds, and flowers, for the use of their students, renewing them from time to time. It at the same time suggests, in respect to evening classes in science, that for classes in geology and mineralogy suitable museum specimens be provided and examined by the pupils, and that for this purpose the necessary microscopes or other apparatus be supplied, and for classes in machine-drawing a suitable collection of models and parts of actual machines be provided. Fresh ideas, indeed, are not to be limited to science and art; for in the matter of domestic economy the Board is this season adding, to its teaching of cookery, needlework, dressmaking, laundrywork, housewifery, hygiene, sick-nursing, and first aid, that of millinery and the care and management of infants—the former in twelve or more lessons and the latter in six, which some parents will think to be disproportionate totals.

LEAD POISONING IN POTTERIES.—Mr. Cramp, superintending inspector of factories for the Birmingham division, records 631 cases of lead-poisoning in the Midlands during 1896, and states that more than one-half of these were from earthenware and china factories of the North Staffordshire Potteries. Mr. Cramp remarks that the section of the Act which requires the occupiers of factories and workshops to send notice of such cases to her Majesty's Inspectors has not worked at all well, and he points out that in many cases it is impossible for a manufacturer to know that a person in his employ is suffering from lead-poisoning. In support of this he quotes a report of a case heard before Mr. Harold Wright at Hanley, in which a prosecution against a pottery company for failing to notify a case of lead poisoning was dismissed, on the ground that no proof had been given that the employers knew that the employee was suffering from such poisoning. Mr. Cramp states that there is a general consensus of opinion amongst the medical gentlemen of the Potteries that there has been a great decrease in the number and seriousness of the cases of lead-poisoning, and that most assuredly the appearance of the works and of the workers has improved. He thinks manufacturers might utilise the services of chemists to discover some mode of using white lead (or substitutes) in the glaze and colours that should be less injurious than the present way, and that workers might be much more careful than they are in personal cleanliness and care of themselves.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzo's are steady, without change in price, 90's still at 1s. 11d. and 50/90's 2s. 1d. Crude carbolic acid is unaltered in price, but crystals (40%) are lower at 6¼d nothing fresh to report about naphthas, both solvent remaining as last quoted. Anthracene shows a slight change better at 5½d. to 6d. for 30% A, and 4½d for 30% B. scarcity it is possible that prices may improve. Pitch is well, but there is no change from old quotation of 18s. to 20 East Coast.

Sulphate of ammonia is a good market, the activity month being well maintained. Prices at all ports are high for the most part an advance of 5s. per ton. For forward price is £8. 15s., Nov.-March delivery. Closing prompt price London outside makes, £8. 10s.; Liverpool, £8. 13s. £8. 12s. 6d.; and Leith, £8. 12s. 6d. Nitrate firmer.

MISCELLANEOUS CHEMICAL MARKETS.

In the alkali trade demand is fairly active, especially for caustic soda prices both prompt and forward are unaltered quotations f.o.b. Liverpool are as follows:—77%, £8. 2s. 6d.; 70%, £7. 7s. 6d.; 60%, £6. 7s. 6d., nett, per ton. For bleaching powder there is a good inquiry and price for pool for best makes is £6. 5s. to £6. 7s. 6d. per ton. Some competition for home trade orders between rival makers and price is nominally £5. 5s. f.o.r. Chlorates unchanged. For soda crystals and bicarbonate prices are steadily. Sulphur £4. 12s. 6d. f.o.r. Saltcake in better request at 1 f.o.r. Sulphate of copper £16. to £15. 5s. f.o.b. Potash, carbonate are without alteration. Brown acetate of lime is to £5. 10s., c.i.f. Other acetates, however, are unchanged of potash advanced to 6¼d. per lb.; cyanide, 1s. 1d. per lb. there is no improvement, and prices rule low. Aniline oil nominally unchanged for spot delivery. Carbolic crystals 6¼d. per lb in quantity. Arsenic firm at £21. 15s. to £22. alum holds good at £4. 12s. 6d., casks, f.o.b. Liverpool cyanides quiet, and prices remain low. Zinc chloride and copperas is selling freely. Ammonia salts dull.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron: Scotch warrant 45s. 9d.; Middlesbro', 41s. 8d. cash; and hematite, 48s. 5s. easy: Chili bars, G.O.B.'s and G.M.B.'s, closed at £47 £48. 1s. 3d. cash, and £48 2s. 6d. to £48. 7s. 6d. the Tin steady: Straits closed at £62. 13s. 9d. to £63. 3s. 9d. £63 5s. to £63. 15s. three months; Australian, £63. 7s. 6d. ingots, £66. 5s. Lead quiet: Spanish, £12. 15s. to £13. English, £13.; Silesian spelter, ordinary, £17. 17s. 6d. 1s. 2½d. Antimony, £29 Quicksilver: First hands, £4 hands, £6 19s. Copper shares quiet: Cape, 2½ to 3 1½ to 2½; Libiola, 2½ to 2¾; Mason and Barry, Rio Tinto, 24½ to 24½; Tharsis, 6¼ to 6½.

GLASGOW, WEDNESDAY.—Market firm, and a good Scotch done at 45s. 8½d., 45s. 9½d., and 45s. 9d. cash 45s. 10½d. and 45s. 11½d. one month; buyers, 45s. sellers, ½d. more. Cleveland, buyers, 41s. 8d. cash; seller Cumberland hematite done at 48s. 4½d. to 48s. 5d. cash, and 48s. 7d. and 48s. 7½d. one month; buyers, 48s. 5d. cash ½d. more. Middlesbrough hematite, buyers, 48s. 9½d. cash 49s.

REPORT ON MANURE MATERIALS.

There continues to be more activity in the market, especially with regard to nitrogenous material.

Quotations for 75/80% Florida phosphate rock is 6d. per good United Kingdom ports, and this price has been refused sea ports, in large lines. Quotations for South Carolina and for similar grade Algerian are unchanged, but there is a hardening tendency.

Bone material is in much request in face of limited values have advanced all round. For East India bone material would be cabled out for chance of business, ex-qua Nov.-Dec. steamer shipment. So far, buyers have refused advance, but there are many buyers at £3. 17s. 6d. £4. is crushed Kurrachees on spot, and £4. 2s. 6d. for shipment. of good common grinding bones has advanced to about £3.

Nitrate of soda is in more request at 7s. 6d. per cwt. for 7s. 7½d. for fine quality. In the forward position, interest and a good business has been done at an advance of fully 1

Blaencallan Paint Works, Ltd.—CAPITAL £200. in £1. shares. This company has been formed to carry on the business of paint and blacklead manufacturers. Registered office, 22, School-street, Elliott Town, New Tredegar, Mon.

French Non-Flammable Products Syndicate, Ltd.—CAPITAL £12,000. in £1. shares. This company has been formed to carry on in the United Kingdom, France, and elsewhere, the business of treating substances of all kinds so as to render the same non-flammable, and to carry on the business of fireproofers, paper makers, dyers, cleaners, etc. The subscribers to the memorandum of association are:—E. R. Harby, Greenhill Lodge, Watford, secretary; E. L. Clapson, 1, Albion-street, Greenwich, secretary; O. H. Merrick, Oxberry Avenue, Fulham, clerk; H. V. Simpson, 15, Auckland-road, Upper Norwood, gentleman; M. E. Toovy, 24, Aldebert Terrace, Clapham-road, S.W., clerk; A. J. Greenop, 15, Victoria-street, S.W., solicitor; P. J. D. Lindoes, 28, Victoria-street, S.W., gentleman.

J. H. Cookson & Son, Ltd.—CAPITAL £50,000. in £10. shares (2,500 £5½ cum. pref.). This company has been formed to acquire and carry on the business of alum and brick manufacturers, carried on at Lofthouse, near Wakefield, as "J. H. Cookson & Son," by J. H. Cookson and H. Cookson, and to adopt a certain agreement. The subscribers to the memorandum of association are:—J. H. Cookson, The Hollies, Stanley, Wakefield, manufacturer; H. Cookson, 128, Northgate, Wakefield, manufacturer; J. H. Phillips, Hazel House, Methley, near Leeds, secretary; G. W. Pratt, 13, Grove-road, Harrogate, colliery agent; L. Pratt, 13, Grove-road, Harrogate; W. Cookson, 31, Berkeley-street, Hull, gentleman; A. Cookson, New-street, Moortop, Ackworth, manager.

Pioneer Oil Co., Ltd.—CAPITAL £500. in £1. shares (300 15% pref.). This company has been formed to acquire the business carried on by the Pioneer Oil Co., Ltd., and to carry on the business of oil importers and merchants. E. Taylor is the managing director; S. F. Wright is the secretary. Registered office, 39, Corporation-street, Birmingham.

Roger le Beau et Cie, Ltd.—CAPITAL £20,000 in £10. shares. This company has been formed to adopt an agreement with P. Villain, and to carry on the business of toilet and other soap manufacturers, perfumers, glycerine distillers, chemists, etc. The subscribers to the memorandum of association are:—P. Villain, 24, Lovely Lane, Warrington, manufacturer; M. Villain, 17, Route de Flandre, Paris, agent; J. C. Hagart, 40, North John-street, Liverpool, broker; R. J. Jones, 6, Dacy-road, Liverpool, accountant; F. Head, 33, Bramah-road, Brixon, clerk; W. H. Newton, 14, South Square, Gray's Inn, solicitor; W. J. Ross, 1a, Carthew Villas, Hammersmith, clerk. Registered office, 17, Cumming-street, Pentonville-road, N.

Russian Petroleum and Liquid Fuel Co., Ltd.—CAPITAL £1,200,000. in £10. shares. This company has been formed to adopt an agreement with W. H. and F. T. Verner, and to acquire, own, work, develop and turn to account certain petroleum or oil-bearing lands in Russia or elsewhere. The subscribers to the memorandum of association are:—W. H. Verner, Kenley, Surrey, gentleman; H. T. McAuliffe, 1 and 2, Great Winchester-street, E.C., chartered accountant; G. A. J. Smallman, Ranelagh House, New Southgate, N., clerk; D. J. Prosser, 24, Maude-road, Camberwell, S.E., clerk; J. M. Lickford, 33, Brunswick Square, W.C., clerk; A. W. Lawson, 338, Romford-road, Forest Gate, E., accountant; W. Farrier, 16, High-street, Homerton, N.E., clerk.

Gazette Notices.

BANKRUPTCY ACTS, 1883 and 1890. Adjudications.

ORME, J. (late carrying on business as J. Orme and Co.), Cross-street, Finsbury, N., and Panama House, Leytonstone, E., late Barbican, E.C., scientific apparatus manufacturer.

TATHAM, S. B., Thurlow Place, South Kensington, S.W. electrical engineer.

IMPORTS OF CHEMICAL PRODUCTS AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending October 30th.

Acetic Acid—
Holland, 50 pks. R. W. Greeff & Co.
91 A. & M. Zimmermann

Acetone—
Austria, 12 drs. S. E. Rly Co.

Alum—
Holland, 465 pks. Ohlenschlager Bros.

Alumina Sulphate—
Germany, 77 cks. H. Wallace & Co.

Ammonia—
Holland, 5 cs. H. Wallace & Co.
65 cks. Medway Navigation Co.

Ammonium Chloride—
Holland, 30 cks. H. Lore 12

Ammonium Nitrate—
Germany, 46 cks. Petri Bros.

Antimony Ore—
U. States, 1 t. B. Ackerley & Son

Arsenic—
Portugal, 165 brls. Coverley & Westray

Melbourne, 50 cks. G. H. Adams & Co.

Asbestos—
Italy, £300 Pickford & Co.
128 W. Pope & Co.
45 C. W. Hay
50 British Asbestos Co.
30 Bender & Martiny
515 Imp. Asbestos Co.

Barytes—
Germany, 54 cks. R. W. Greeff & Co.
Holland, 23 T. & W. Farnille, Ltd.
Belgium, 88 pks. 12 cks. J. L. Lyon & Co.
185 241 brls. W. Harrison & Co.

Bleaching Powder—
Holland, 20 cks. J. M. Steel & Co.

Boric Acid—
Italy, 17 pks. J. Burdon & Co.

Bromide of Iron—
Germany, 25 cks. A. & M. Zimmermann

Bromine—

Germany, 20 cs. A. & M. Zimmermann

Caoutchouc—

Madagascar, 7 c. Procter Bros.

142 Hammond & Co.

Penang, 314 Butler's Wf. Ltd.

Singapore, 84 S. Figgis & Co.

82 R. & J. Henderson

Zanzibar, 27 Hale & Son

Penang, 100 Prop. Bull Wf.

France, 7 H. Johnson & Sons

Zanzibar, 36 S. Figgis & Co.

20 L. & I. D. Jt. Co.

Singapore, 1 H. W. Jewsbury & Co.

Penang, 617 E. Boustead & Co.

Castor Oil—

Italy, 10 cs. L. & I. D. Jt. Co.

30 Stebbings & Co.

20 A. & M. Zimmermann

10 Fellows, Morton & Co.

E. Indies, 14 J. Owen

France, 3 brls. City Coml. Wf. Co. Ltd.

Italy, 10 cs. A. Loring & Co.

Caustic Potash—

Germany, 40 drs. J. M. Steel & Co.

35 cks. Perkins & Homer

France, 4 drs. J. A. Reid

Chemicals (otherwise undescribed)

Germany, £172 H. Lambert

U. States, 16 Major & Field

Belgium, 201 T. H. Lee

26 O. Scholzig

Germany, 25 Phillips & Graves

Holland, 34 H. Lorenz

Belgium, 80 T. Palmer

France, 29 Mory & Co.

Germany, 60 L. & I. D. Jt. Co.

Holland, 15 J. Barber & Co.

22 J. Owen

Germany, 200 Spies Bros. & Co.

106 R. Ulrich

Belgium, 10 John Cockerill Line

Germany, 475 T. H. Lee

558 A. & M. Zimmermann

Copper Sulphate—

Germany, 15 cks. Charles & Fox

Cream of Tartar—

France, 20 cks. B. & F. Wf. Co.

Dextrine—

Germany, 100 bgs. J. Barber & Co.

15 M. D. Co.

5 J. Knill & Co.

50 R. Bennett & Co.

26 Pronk, Davis & Co.

250 W. Balchin, Ltd.

Dyestuffs—

Belgium, 15 brls. A. B. Curtis & Co.

Aniline, 24 pks. W. Gerson & Co.

Holland, 4 L. C. & D. Rly Co.

Annatto

France, 18 pks. C. Faust & Co.

Argols

Italy, 404 bgs. B. Jacob & Sons

Cochineal

Canaries, 6 bgs. W. M. Smith & Sons

20 Knowles & Foster

Cutch

U. States, 200 bgs. Brown & Elmslie

France, 16 cs. Marshall & French

Extracts

U. States, 105 pks. W. Burton & Sons

France, 25 cks. Beresford & Co.

Holland, 5 cs. G. Rahn & Co.

France, 11 brls. Bennett S. S. Co.

210 cks. L. J. Levinstein & Sons

17 pks. Union Lge. Co.

Germany, 7 cs. T. H. Lee

Holland, 8 cks. J. Norrenberg & Co.

Fustic

B. W. L., 20 t. Royal Mail S. P. Co.

Gambir

Singapore, 854 bgs. G. R. Haller

256 bls. L. & I. D. Jt. Co.

Indigo

Germany, 17 cs. L. & I. D. Jt. Co.

E. Indies, 17 chis. "

Logwood

B. W. L., 7 t. S. Dobree & Sons

Madder

France, 2 cks. Skilbeck Bros.

Myrabolams

E. Indies, 2,000 pkts. P. & O. Co.

" 1,100 bgs. Baxter & Hoare

" 1,366 W. Shelcott

Saffron

Spain, 1 cs. Richardson, Spence & Co.

Shumac

France, 100 bgs. R. Warner & Co.

Tanners' Bark

Natal, 20 t. B. Atcher, Mortimore & Co.

Adelaide, 29 H. Johnson & Sons

Holland, 65 Little & Johnston

Natal, 11 Flack, Chandler & Co.

Holland, 36 Hicks, Nash & Co.

Valonia

A. Turkey, 25 t. Hicks, Nash & Co.

" 10 F. Clayton & Co.

" 25 A. & W. Nesbitt

" 25 W. H. Mitchell

Farina—

Holland, 100 bgs. H. Lorenz

" 50 Dunlop Bros. & Co.

" 100 R. Bennett & Co.

Germany, 5 M. H. Co.

Holland, 100 J. Barber & Co.

" 50 E. & T. Pink

" 50 J. Knill & Co.

" 64 T. H. Lee

Holland, 150 G. Hornum

Glucose—

U. States, 1,713 pks. 2,961 c. R. G. Hall & Co.

" 50 304 Wilson & Co.

" 250 950 C. S. Lovell

" 750 750 G. Clark & Co.

" 300 300 Jenkinson & Co.

France, 200 200 W. E. Cole

200 200 J. Pargos

U. States, 230 231 Bennett S. S. Co.

Germany, 27 237 Williams

U. States, 250 230 Torrey & Co.

France, 200 200 J. Barber & Co.

Germany, 25 200 M. H. Co.

U. States, 400 400 Fellows

" 400 Morton & Co.

Glue—
Italy, £134 Sanders & Knott
Holland, 14 G. Rahn & Co.
Germany, 163 L. & I. D. Jt. Co.
France, 120 Prop. Hay's Wf.
Adelaide, 153 T. G. & T. Powell
Belgium, 464 J. Barb r & Co.
Germany, 52 M. D. Co.
France, 28 Mory & Co.
Germany, 120 W. Harrison & Co.
Italy, 103 Greenberg & Co.

Infusorial Earth—
Germany, £15 Invicta Asbestos Co.
Holland, 60 A. Haacke & Co.

Lamp Black—
Germany, 20 cks. Steinhoff, Sons, & Co.
U. States, 160 brls. L. & I. D. Jt. Co.

Lead Acetate—
Germany, 10 cks. R. W. Greeff & Co.
" 45 F. Boehm
" 20 J. Lucy & Sons

Magnesia—
Holland, 5 cs. A. & M. Zimmermann

Manure—
Germany, 22 t. A. J. Luke & Co.
Sydney, 35 Hicks, Nash, & Co.
Germany, 231 Agricultural & Horti ultural Assocn.

Methyl Alcohol—
U. States, 30 brls. H. G. Brown
Holland, 14 cks. R. D. Lyon
" 24 Domeier & Co.

Mica—
China, £180 L. & I. D. Jt. Co.

Nickel Salts—
Germany, 4 cks. Petri Brs.

Ochre—
Holland, 14 pks. 5 cs. Philipps & Graves
France, 21 cks. Beck & Pollitzer
Italy, 22 Burnett Brs. & Sons
France, 473 H. B. Alder & Co.
" 14 W. Harrison & Co.
" 14 Wilkinson, Heywood, & Co.

Phosphate Rock—
Holland, 250 t. Anglo-Contl. Guano Works
France, 395
U.S., 2,030 Wylie, Ward, & Co.
Colombia, 2

Pitch—
Germany, 47 brls. Poth, Hille, & Co.

Plumbago—
Germany, 87 cks. B. Gallaway
" 97 Morgan Crucible Co.
" 51 O. Scholzig
U. States, 31 pks. Lunham & Moore
E. Indies, 128 cks. J. Thredder, Son, & Co.
Ceylon, 387
Germany, 14 H. Lambert
Ceylon, 126 G. R. Haller
Italy, 40 Acton & Borman

Potassium Carbonate—
Germany, 275 c. Petri Brs.
" 22 cks. J. M. Steel & Co.
" 50 c. A. J. Luke & Co.

Potassium Chloride—
Holland, 45 cks. H. Johnson & Sons
Germany, 308 bgs. Blagden, Waugh, & Co.

Potassium Permanganate—
Holland, 4 cks. H. Grey, junr.

Potassium Sulphate—
Germany, 138 bgs. Blagden, Waugh, & Co.

Pumice Stone—
Italy, 2 t. O'Hara & How
" 10 G. S. N. Co.

Rosin—
France, 50 brls. W. Harrison & Co.

Saltpetre—
Germany, 42 cks. L. & I. D. Jt. Co.
" 63 J. Hall & Son
E. Indies, 205 bgs. A. B. Curtis & Co.
Germany, 189 Lucas & Spencer's Wf.
" 162 cks. P. Hecker & Co.
" 20 Petri Brs.

Soda—
Holland, 300 kgs. R. W. Greeff & Co.

Sodium Prussiate—
Belgium, 42 cks. Blagden, Waugh, & Co.

Starch—
U. States, 275 bgs. Wilsons & Furness
Holland, 2,552 cs. Little & Johnston
Belgium, 431 F. Claydon & Co.

Germany, 50 bgs. J. Barber & Co.
Holland, 660 cs. A. Starck
Belgium, 89 Leach & Co.
France, 5 L. P. D. Co.
Germany, 80 Philipps & Graves
Holland, 110 T. H. Lee
Belgium, 534 J. Harrison
" 40 Becker & Wagner
" 264 R. Bennett & Co.
U. States, 500 sks.

Stearine—
Holland, 13 bls. J. Owen

Sulphur—
Italy, 846 t. G. Boor & Co.
" 73 Fenton, Levy, & Co.
" 2 J. Greig
" 7 F. C. Devon & Co.

Sulphuric Acid—
Germany, 10 pks. Elkan & Co.

Talc—
France, £20 C. Windschuegl & Co.

Tar—
N. Russia, 912 brls. Berlandina Brs. & Co.
" 1,975 Linck, Moeller, & Co.

Tartaric Acid—
Holland, 6 pks. Kirkpatrick & Co.

Ultramarine—
Germany, 4 pks. H. Lambert
" 21 Steinhoff, Sons, & Co.
Holland, 12 cks. H. Keller & Co.

Varnish—
U. States, 77 pks. Taylor Brs.
" 31 Lunham & Moore
" 107 Williams
" 107 Torrey, & Co.
" 1 L. & I. D. Jt. Co.
" 1 T. H. Lee

Verdigris—
France, 2 cks. B. & F. Wf. Co.

Yellow Iron—
Hong Kong, 4 cs. L. & I. D. Jt. Co.

White Lead—
Germany, 19 cks. Perkins & Homer
" 9 H. Johnson & Sons
" 22 N. J. Fenner & Co.
" 59 Wilkinson, Heywood, & Co.
Holland, 20 Burrell & Co.
Belgium, 38 J. L. Lyon & Co.
Germany, 28 J. Matton
" 22 A. Zumbach & Co.
" 26 R. J. Francis & Co.
" 75 Steinhoff, Sons, & Co.

Wood Pulp—
Germany, 530 pks. E. J. & W. Goldsmith
Holland, 167 S. E. Ratway Co.
Sweden, 560 W. G. Taylor & Co.
" 460 Henderson, Craig, & Co.
" 400 Tough & Henderson
Germany, 46 Thames S. T. & L. Co.
" 400 Henderson, Craig, & Co.
U. States, 5 J. Forsey
Sweden, 272 C. S. Lovell
Holland, 1,378 E. J. & W. Goldsmith
Portugal, 250 Page, Son, & East
Germany, 406 W. Friedlaender

Zinc Oxide—
Holland, 150 pks. Prprs. Dowgate Dk.
" 49 brls. M. Ashby, Ltd.
Germany, 6 cks. R. W. Greeff & Co.
Holland, 500 Soundy & Sons
Spain, 619 bgs. W. Harrison & Co.
U. States, 125 brls. M. Ashby, Ltd.

Zinc White—
Holland, 50 cks. Burrell & Co.

LIVERPOOL.

Week ending October 28th.

Antimony—
Antofagasta, 390 bgs.

Barytes—
Rotterdam, 21 cks.
Antwerp, 33 cks. 130 bgs.

Bone Black—
Philadelphia, 20 brls. E. F. Houghton & Co.

Castor Oil—
Calcutta, 986 cs. Ralli Brs.
" 698

Chemicals (otherwise undescribed)
Hamburg, 10 cks.

Coal Products (otherwise undes.)—
Antwerp, 8 bskts.

Cod Oil—
Hamburg, 20 brls.

Cottonseed Oil—
New York, 100 brls.

Cream of Tartar—
Bordeaux, 20 cks.
Rotterdam, 2
Oporto, 38

Dyestuffs—
Cochineal
Las Palmas, 11 bgs. Canary Islands Trading Co.

Cutch
Rangoon, 509 bxs.

Fustic
Vera Cruz, 754 sticks

Logwood
Belize, 100 t. J. E. Plummer

Orchella
Hamburg, 10 bls.

Shumac
Barcelona, 100 sks.

Farina—
Fiume, 350 bgs.
Stettin, 100
Havre, 500 sks. Cunard S. S. Co., Ld.

Glucose—
New York, 200 brls. T. M. Duche & Sons

Glue—
Fiume, 20 bls.
New York, 3 bls. Oxford Univ. Press Bindery

Rotterdam, 7 cs.
Antwerp, 1 brl.
St. Nazaire, 39 cks.
Hamburg, 40 tgs.

Lead Acetate—
Hamburg, 8 cks.

Limestone—
Antwerp, 3 cs. J. T. Fletcher & Co.
" 4 crts.
" 6

Litharge—
Rotterdam, 7 cks.

Lithopone—
Stettin, 4 cks. J. Helme & Co.
Rotterdam, 40

Magnesite—
Fiume, 10 bgs.

Mineral White—
Fiume, 200 bgs.

Ochre—
Pouen, 87 cks. Co-op. W'sale Society, Ltd.
" 38 R. J. Francis & Co.

Oxalic Acid—
Stettin, 7 cks.

Paint—
Baltimore, 20 cs. J. Nickels & Son

Amsterdam, 10 brls.
Philadelphia, 6 bgs.

Paraffin Scale—
Baltimore, 100 brls.

Phosphate—
Dunkirk, 3,200 bgs.

Phosphate Rock—
Brunswick, Ga., 802 t.

Phosphoric Acid—
Hamburg, 15 cks.

Potash—
Dunkirk, 16 dms.
Rouen, 42 cks. Co-op. W'sale Society, Ltd.

Potassium Chlorate—
Gothenburg, 100 kgs.

Potassium Silicate—
Hamburg, 2 brls.

Pyrites—
Huelva, 2,912 t. Matheson & Co.

Rosin—
Brunswick, Ga., 1,050 brls.

Saltpetre—
Hamburg, 4 cks. 10 kgs.

Soap—
St. Nazaire, 6 cks. 1 cs.

Soapstone—
Genoa, 200 bgs.

Starch—
Amsterdam, 40 bxs.
Rotterdam, 52 cs.
Antwerp, 76

Stearine—
Rouen, 13 bgs. Co-op. W'sale Society Ltd.
Antwerp, 13 J. T. Fletcher & Co.
" 1 ck.

Talc—
Barcelona, 300 sks.

Tallow—
San Francisco, 1,100 brls.

Tartar—
Hamburg, 2 cks.

Tartaric Acid—
Hamburg, 3 cks.
Rotterdam, 2 cs.

Ultramarine—
Rotterdam, 20 cks.

Varnish—
New York, 10 brls. W. A. Warren

White Lead—
Rotterdam, 29 cks.

Wood Pulp—
Gothenburg, 6 pks. G. Schenkenwald & Co.
" 170 bls.
Rotterdam, 215
Antwerp, 250

Zinc Oxide—
Antwerp, 10 brls.

Zinc White—
Hamburg, 40 cks.
Rotterdam, 10

MANCHESTER.

Week ending October 30th.

Ammonium Chloride—
Rotterdam, 11 cks.

Aniline Colours—
Rotterdam, 1 ck. 1 cs.

Antimony Oxalate—
Rotterdam, 4 cks.

Antimony Salts—
Rotterdam, 10 cks.

Asbestos—
Genoa, 3 cs.

Barytes—
Rotterdam, 22 cks.
Antwerp, 174 bgs.

Chemicals (otherwise undescribed)
Rotterdam, 3 cks.

Coal Products (otherwise undes.)—
Antwerp, 7 cks.

Colours—
Antwerp, 1 ck. J. T. Fletcher & Co.

Rotterdam, 96 25 cs.
Ghent, 4 brls.

Dyestuffs—
Alizarine
Rotterdam, 36 cks.
Shumac
Palermo, 415 bls.

Farina—
Copenhagen, 100 bgs.
Stettin, 1,500 Browne, Geveke & Co.

Rotterdam, 2,195
" 4,200

Glucose—
Stettin, { 1,100 bgs. 100 kgs.
" 100 cks. 100 kgs.

Glue—
Rotterdam, 100 bgs.
Rouen, 20 cks. 40 bls.
Antwerp, 20
Fiume, 5 170

Indigo—
Rotterdam, 2 chts.

Lamp Black—
Genoa, 1,260 bgs.

Limestone—
Antwerp, 2 crts.

Lithopone—
Stettin, 67 cks.

Mineral White—
Fiume, 200 bgs.

Phosphate—
Antwerp, 7 cks.

Potash—
Rouen, 4 dms.

Potassium Prussiate—
Rotterdam, 3 cks.

Pyrites—
Huelva, 1,627 t.

Soap—
Leghorn, 20 cs.

Sodium Acetate—
Antwerp, 16 cks.

Sodium Nitrate—
Rotterdam, 12 cks.

Starch—	
Rotterdam,	440 cs.
Antwerp,	8
Fiume,	50 bgs.
Stearine—	
Rotterdam,	20 bls.
Tar Waste—	
Rotterdam,	3 cks.
Tartaric Acid—	
Rotterdam,	29 cks.
Ultramarine—	
Rotterdam,	40 cs.
White Lead—	
Antwerp,	18 cks.
Wood Pulp—	
Stettin,	1,354 pks.
Rotterdam,	132 rolls
Fiume,	102 pks.
Zinc Ashes—	
Antwerp,	17 brls
Zinc Oxide—	
Rotterdam,	10 cks. 114 brls
Zinc White—	
Rotterdam,	38 cks.

HULL.

Week ending October 30th.

Acetic Acid—	
Antwerp,	31 cks. Bailey & Leatham, Ld.
Acids—	
Hamburg,	29 cks. Wilson, Sons, & Co., Ld.
Bari,	10 "
Alkali—	
Bremen,	4 cs. Veltmann & Co.
Aluminium—	
New York,	51 bxs. Wilson, Sons, & Co., Ld.
Antimony—	
Rotterdam,	1 brl. W. & C. L. Ringrose
Asbestos—	
Boston,	2,000 bgs. Wilson, Sons, & Co., Ld.
Barytes—	
Antwerp,	63 cks. Bailey & Leatham, Ld.
Bremen,	22 cks. Tudor & Sons
"	44 Hanger, Watson, & Harris
Rotterdam,	61 Hutchinson & Son
Chemicals (otherwise undescrbed)	
Antwerp,	50 brls. Wilson, Sons, & Co., Ld.
Hamburg,	35 dms. Wilson, Sons, & Co., Ld.
Cod Oil—	
Drontheim,	6 brls. Wilson, Sons, & Co., Ld.
Christiansund,	100 "
Aalesund,	30 "
Bergen,	50 "
Colours—	
Rotterdam,	2 pks. Hutchinson & Son
"	4 cs. W. & C. L. Ringrose
"	13 brls. Ringrose
Antwerp,	59 pks. Bailey & Leatham, Ld.
"	2 cks. Wilson, Sons, & Co., Ld.
"	22 pks. Wilson, Sons, & Co., Ld.
Cottonseed Oil—	
New York,	517 brls. Wilson, Sons, & Co., Ld.
Cryolite—	
Copenhagen,	25 cks. Wilson, Sons, & Co., Ld.
Dextrine—	
Stettin,	50 bgs. Wilson, Sons, & Co., Ld.
Dyestuffs—	
Alizarine	
Rotterdam,	12 pks. W. & C. L. Ringrose
Madder	
Rotterdam,	31 brls. Ringrose
Madder	
Rotterdam,	2 cks. Hutchinson & Son
Shumac	
Palermo,	560 bgs. Wilson, Sons, & Co., Ld.
"	150 "
Valonia	
Smyrna,	557 t.
Farina—	
Harlingen,	820 bgs. W. & C. L. Ringrose
Stettin,	450 Wilson, Sons, & Co., Ld.

Glucose—	
New York,	349 brls. 500 bgs.
Rotterdam,	63 Hutchinson & Son
Stettin,	10 cs. Wilson, Sons, & Co., Ld.
Glue—	
Hamburg,	25 bgs. Wilson, Sons, & Co., Ld.
Lead Acetate—	
Stettin,	1 ck. Wilson, Sons, & Co., Ld.
Limestone—	
Antwerp,	5 crts. Wilson, Sons, & Co., Ld.
Linseed Oil—	
Christiania,	2 brls. Wilson, Sons, & Co., Ld.
Ochre—	
Rouen,	26 cks. Rawson & Robinson
Phosphate—	
Bona,	1,350 t.
Pitch—	
Amsterdam,	13 cks. Hutchinson & Son
Rotterdam,	27 "
Plumbago—	
New York,	3 kg. Wilson, Sons, & Co., Ld.
Pumice Stone—	
Messina,	75 pks. Wilson, Sons, & Co., Ld.
Soap—	
New York,	200 brls.
Boston,	235 Wilson, Sons, & Co., Ld.
Bari,	12 cs.
Soda—	
Antwerp,	156 pks. Bailey & Leatham, Ld.
"	100 bgs. Wilson, Sons, & Co., Ld.
Starch—	
Ghent,	264 cs. Wilson, Sons, & Co., Ld.
Antwerp,	180 Bailey & Leatham, Ld.
"	420 Wilson, Sons, & Co., Ld.
Sulphur—	
Catania,	1,087 pks.
Tallow—	
Stockholm,	5 cks. W. & H. Johnson
New York,	250 tcs. Wilson, Sons, & Co., Ld.
Tar—	
Drontheim,	1 brl. Wilson, Sons, & Co., Ld.
Treacle—	
New York,	2,108 brls. Wilson, Sons, & Co., Ld.
Boston,	100 445 "
Varnish—	
New York,	2 brls. Wilson, Sons, & Co., Ld.
White Lead—	
Rotterdam,	50 cks. Hutchinson & Son
Antwerp,	29 Bailey & Leatham, Ld.
Wood Pulp—	
Christiania,	1,450 bls. Wilson, Sons, & Co., Ld.
Drontheim,	720 J. Good & Sons
Helsingfors,	441 "
Hango,	1 Wilson, Sons, & Co., Ld.
Gothenburg,	649 "
Zinc Ashes—	
Stettin,	15 cks. Wilson, Sons, & Co., Ld.
Zinc Oxide—	
New York,	60 brls.

GLASGOW.

Week ending November 4th.

Albumen—	
Ghent,	30 cs.
Antimony Salts—	
Rotterdam,	10 cks. J. Rankine & Son
Barium Chloride—	
Rotterdam,	4 cks. J. Rankine & Son

Barium Sulphate—	
Antwerp,	400 bgs.
Barytes—	
Rotterdam,	139 cks. J. Rankine & Son
Bone Meal—	
Hangesund,	331 bgs.
Chemicals (otherwise undescrbed)	
Rotterdam,	10 cks. J. Rankine & Son
Chrome Alum—	
Rotterdam,	10 cks. J. Rankine & Son
Colours—	
Rotterdam,	1 brl. J. Rankine & Son
Antwerp,	14 cks. 2 cs.
Cottonseed Oil—	
New York,	160 brls.
Dyestuffs—	
Alizarine	
Rotterdam,	142 cks. J. Rankine & Son
Aniline	
Rotterdam,	4 cks. J. Rankine & Son
Aniline Colours	
Amsterdam,	1 cs. 5 bxs. 6 brls. & Son
Argois	
Bordeaux,	2 cks.
Cutch	
Rangoon,	17 bgs.
Valonia	
Smyrna,	250 bxs. P. Henderson & Co.
Farina—	
Delftzyhl,	119 cs. 28 bgs.
Gelatine—	
Hamburg,	1,500 bgs.
Glucose—	
New York,	5 cs.
Glue—	
Hamburg,	300 brls.
Oxalic Acid—	
Rotterdam,	7 cks. J. Rankine & Son
Potash—	
Rotterdam,	6 cks. J. Rankine & Son
Potassium Bromide—	
Hamburg,	83 cks. J. Rankine & Son
Potassium Permanganate—	
Rotterdam,	1 cs. J. Rankine & Son
Saltpetre—	
Hamburg,	5 cks. J. Rankine & Son
Soap—	
New York,	20 cks.
Soda Ash—	
Rotterdam,	165 brls. J. Rankine & Son
Sodium Sulphate—	
Rotterdam,	183 bgs. J. Rankine & Son
Antwerp,	2 brls. J. Rankine & Son
Starch—	
New York,	32 cks.
Antwerp,	1,099 bxs. 528 sks.
Ghent,	240 cs.
Rotterdam,	1 J. Rankine & Son
Tallow—	
New York,	40
Tartar—	
Bordeaux,	25 tcs.
Tin Ash—	
Antwerp,	2 cks.
Treacle—	
New York,	8 cs.
Turpentine—	
Antwerp,	578 brls.
Varnish—	
New York,	100 cks.
Waste Salt—	
Hamburg,	48 brls. 6 cs. 1 bx.
White Lead—	
Rotterdam,	102 bgs.
Wood Pulp—	
Montreal,	101 cks. J. Rankine & Son
Hamburg,	10 pks.
Christiansand,	1,200 hndls.
Christiania,	33 bls.
Drontheim,	3,050
Zinc Oxide—	
New York,	1,224 47 cs.
Zinc White—	
Rotterdam,	140
Antwerp,	50 brls.
Rotterdam,	25 cks. J. Rankine & Son
Antwerp,	65 pks.

TYNE.

Week ending October 30th.

Alum Earth—	
Hamburg,	38 cks. Tyne S. S. Co.
Barium Chloride—	
Rotterdam,	350 bgs. Tyne S. S. Co.
Barytes—	
Antwerp,	200 bgs. Tyne S. S. Co.
Colours—	
Antwerp,	6 cks. Tyne S. S. Co.
Rotterdam,	1 brl. "
Glue—	
Antwerp,	5 cks. Tyne S. S. Co.
Limestone—	
Antwerp,	6 crts. Tyne S. S. Co.
Ochre—	
Rouen,	19 cks. J. Brown & Co.
Pitch—	
Rotterdam,	3 cks. Tyne S. S. Co.
Antwerp,	5 "
Pyrites—	
Drontheim,	1,060 t. Bede Metal & Chemical Co.
Saltpetre—	
Hamburg,	20 kgs. Tyne S. S. Co.
Soap—	
Rotterdam,	8 cs. Tyne S. S. Co.
Starch—	
Rotterdam,	120 cs. Tyne S. S. Co.
Antwerp,	120 "
Varnish—	
Ghent,	2 cks. Tyne S. S. Co.
Zinc White—	
Rotterdam,	25 cks. Tyne S. S. Co.

GOOLE.

Week ending October 27th.

Alizarine—	
Rotterdam,	67 brls.
Antimony—	
Boulogne,	1 ck.
Caoutchouc—	
Boulogne,	7 cks.
Colours—	
Hamburg,	4 cs.
Dyestuffs (otherwise undescrbed)	
Boulogne,	13 cks. 21 cs. 8 pks.
Rotterdam,	503 89
Farina—	
Hamburg,	200 bgs.
Glue—	
Antwerp,	2 cks.
Madder—	
Rotterdam,	2 brls.
Potash—	
Hamburg,	20 cks.
Dunkirk,	40 drs.
Pyrites—	
Huelva,	477 t.
Saltpetre—	
Rotterdam,	100 bgs.
Starch—	
Antwerp,	112 cs.
Stearine—	
Rotterdam,	7 bgs.
Tartar—	
Hamburg,	5 cks.
Dunkirk,	20 bgs.

GRIMSBY.

Week ending October 30th.

Albumen—	
Hamburg,	9 cks.
Caoutchouc—	
Rotterdam,	2 cs.
Antwerp,	3
Hamburg,	1
Chemicals (otherwise undescrbed)	
Antwerp,	2 cks. 1 cs. 1 pk.
Hamburg,	7
Colours—	
Hamburg,	1 ck. 7 pks.
Rotterdam,	10
Antwerp,	5 1 cs.
Dyestuffs (otherwise undescrbed)	
Dieppe,	30 cks.
Farina—	
Hamburg,	200 bgs.
Wood Pulp—	
Malmo,	240 bls.
Zinc Ashes—	
Antwerp,	26 cks.

EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.			Naphthaline		
ending November 3rd.			Cologne, 5 cks.	£95	
			New York, 7 pks.	17	
			Hamburg, 6	53	
			Pitch		
			Marseilles, 1,620	£1,620	
			Dunkirk, 148	148	
			Cette, 1,145 t.	1,145	
			Hochfeld, 220	314	
			Boston, 11 cks.	30	
			Genoa, 8.0	8.0	
			New York, 556 bgs.	105	
			St. Nazaire, 1,050	1,200	
			Malta, 200 brls.	53	
			Aviles, 800	883	
			Prussian Blue		
			Rotterdam, 14 cks.	£16	
			Pyridine		
			Rotterdam, 12 cks.	£150	
			Sydney, 25½ brls.	13	
			Montreal, 330	80	
			Hamburg, 5	2 dms.	129
			Tar		
			Durban, 80 dms.	£13	
			Dunedin, 10	5½ brls.	5
			E. London, 170	97	
			Hamburg, 97	25	
			New York, 25	80	
			Danzig, 150	12	
			Sydney, 50	14	
			Pt. Elizabeth, 400	14	
			Copper Sulphate—		
			Launceston, 2 t. 15 c.	£44	
			Rotterdam, 1	18	
			Nelson, 1	19	
			Cream of Tartar—		
			Launceston, 15 c.	£60	
			Auckland, 10	39	
			Hiogo, 1 t.	32	
			Lyttelton, 5	19	
			Nelson, 10	41	
			Napier, 3	14	
			Pt. Elizabeth, 2	22	
			Fremantle, 1	8	
			Melbourne, 2	10	
			Disinfectants—		
			Townsville, 2 pks.	£26	
			Bombay, 112 cks. 6 cs.	132	
			Calcutta, { 8½ g. 3	85	
			Calcutta, { 50 cks. 150 dms.	70	
			Fremantle, 20	206	
			Cape Town, 20	480	
			Bremen, 6	53 cs.	206
			New York, 80	61	
			Madras, 100	50	
			Swatow, 25	66	
			Antwerp, 3	11	
			Sydney, 5	12	
			Dried Blood—		
			New York, 5 t.	£281	
			Manure—		
			Demerara, 10 t. 1 c.	£82	
			Cape Town, 200	500	
			Jersey, 120	7	
			Muriatic Acid—		
			Demerara, 30 crbys.	£11	
			Nitric Acid—		
			Jersey, 28 crbys.	£44	
			Oxygen—		
			Amsterdam, 1 cs.	£45	
			Phosphate—		
			Auckland, 20 t.	£43	
			Phosphorus—		
			Launceston, 1 c.	£13	
			Potash—		
			Dunedin, 3 c.	£11	
			Potash Salts—		
			Auckland, 6 t. 13 c.	£425	
			Potassium Chlorate—		
			Madras, 8 c.	£14	
			Christchurch, 7	7	
			E. London, 1 t.	34	
			Calcutta, 1	33	
			Potassium Cyanide—		
			Albany, 2 t. 10 c.	£180	
			Potassium Prussiate—		
			Genoa, 4 cks.	£50	
			Hamburg, 10	14	
			Saltpetre—		
			Sydney, 2 t.	£41	
			Melbourne, 2	41	
			Hamburg, 2	14 c.	45
			Durban, 11	11	
			Nelson, 10	11	
			E. London, 1	1	24
			Sheep Dip—		
			Montreal, 1 t. 3 c.	£15	
			Nelson, 130 dms.	41	
			Melbourne, 90 pks.	85	
			Calcutta, 21	25	
			Santa Cruz, 6	5	165
			Gallego, 10	11	250
			E. London, 0	5	125
			Lyttelton, 12 cs.	30	
			Durban, 2	1,000 dms. 202	
			Wellington, 10	16	400
			B. Ayres, 64	4	5 cs. 1,972
			M. Video, 12	7	325
			Soda Ash—		
			Auckland, 20 t.	£100	
			Nelson, 5	25	
			Soda Crystals—		
			Shanghai, 1 t. 15 c.	£6	
			Sodium B carbonate—		
			Halifax, 1	£25	
			Durban, 12 c.	9	
			Hiogo, 1	28	
			Hobart, 10	7	
			Nelson, 2	15	
			Calcutta, 12	13	
			Sodium Silicate—		
			Nelson, 2 t. 13 c.	£11	
			Sulphur—		
			Nelson, 19 c.	£8	
			Sulphuric Acid—		
			Singapore, 10 cs.	£10	
			E. London, 20 dms.	22	
			Tartaric Acid—		
			Auckland, 5 c.	£30	
			Lyttelton, 2 t.	242	
			Nelson, 6	41	
			Cape Town, 2	12	
			Fremantle, 5	31	
			Karachi, 4	25	
			LIVERPOOL.		
			Week ending November 3rd.		
			Alum—		
			Bourgas, 2 t. 17 c.	3 q. £13	
			Syria, 5	16	2
			Braila, 2	4	2
			Lisbon, 9	16	1
			Madras, 7	1	1
			Portland, On., 3	18	2
			Smyrna, 3	10	2
			Montreal, 3	11	3
			Kustendje, 2	1	10
			M. Video, 2	19	2
			Ammonia (Liquid)—		
			Rio de Janeiro, 4 c.	2 q. £5	
			Ammonium Carbonate—		
			New York, 1 t. 5 c.	£32	
			Oporto, 1	25	
			Bordeaux, 8	1	12
			Ammonium Chloride—		
			Salonica, 1 t.	£13	
			Gröthenburg, 14 c.	12	
			Genoa, 1	3	40
			New York, 15	302	
			Larnaca, 1	4	6
			Trieste, 1	30	
			Genoa, 5	87	
			Naples, 4 cks.	80	
			Patras, 4	6	
			Piraeus, 16	25	
			Ammonium Sulphate—		
			Bari, 10 t.	£85	
			Gandea, 58	1 c. 2 q. 465	
			Antwerp, 100	900	
			Philadelphia, 50	5	411
			New York, 29	12	2
			Castellon, 81	1	65
			Valencia, 133	6	3
			Barcelona, 130	12	2
			Barbadoes, 56	476	
			Antimony Sulphide—		
			Boston, 9 cks.	£164	
			Bleaching Powder—		
			Baltimore, 35 cks.		
			Bilbao, 15		
			Boston, 449		
			Calcutta, 10		
			Ghent, 74		
			Lisbon, 26		
			Montreal, 151		
			Naples, 18		
			Newport News, 192		
			New York, 168		
			Rio de Janeiro, 84 pks.		
			Rouen, 40 cs.		
			San Sebastian, 88		
			Vera Cruz, 60		
			32		
			Boracic Acid—		
			Victoria, B.C., 5 c.	£6	
			Montreal, 3 t.	17	3 q. 100
			Borax—		
			Ghent, 1 t. 1 c.	£16	
			Montreal, 43	7	1 q. 644
			Berlin, 5	2	128
			Hamburg, 1	12	3
			Rotterdam, 6	7	110
			Galatz, 1	2	15
			Stettin, 10	8	2
			Antwerp, 3	4	3
			Calcium Chloride—		
			Messina, 12 t.	£27	
			Montreal, 1	4 c.	3
			M. Video, 3	1	7
			Carbolic Acid—		
			Mayaguez, 2 c.	£5	
			Marseilles, 1 t.	6	2 q. 475
			Victoria, B.C., 1	3	3
			Hamburg, 6	3	56
			Montreal, 10	620	
			Rotterdam, 5	5	359
			Sierra Leone, 10	5	
			Halifax, 7	28	
			Milan, 1	7	65
			Odessa, 1	11	99
			Caustic Potash—		
			Bombay, 1 t. 2 c.	£31	
			Geelong, 4	120	
			Caustic Soda—		
			Adelaide, 90 dms.		
			Alexandria, 30		
			Alicante, 50		
			Bahia, 10		
			Baltimore, 150		
			Barcelona, 230 cks.		
			Bari, 17		
			Bombay, 20		
			Bo-ton, 30		
			Bremen, 5 brls.		
			Brisbane, 31		
			B. Ayres, 50		
			Cape Town, 10 bxs.		
			Copenhagen, 18		
			Corinto, 14		
			Delagoa Bay, 10 cs.		
			E. London, 20		
			Galatz, 635		
			Genoa, 13		
			Hamburg, 8		
			Hiogo, 60		
			Honolulu, 45		
			Las Palmas, 3 cks.		
			Leghorn, 95		
			Malaga, 115		
			Maranham, 10		
			M. Video, 125		
			Montreal, 647		
			Naples, 30		
			N. Orleans, 30	10 bxs.	
			New York, 22	25 cks. 30 cs.	
			Odessa, 350		
			Parnahyba, 15		
			Passages, 40 pks.		
			Pt. Natal, 111		
			Quebec, 48		
			Rio de Janeiro, 107		
			Rouen, 223		
			St. John's, 30		
			Savannah, 10		
			Seville, 336 drs.		
			Stettin, 185		
			Stockholm, 15	155 pks.	
			Sydney, 10		
			Tarragona, 10		
			Trieste, 15		
			Valencia, 85		
			Valparaiso, 40		
			Venice, 15		
			Vera Cruz, 45		
			Vigo, 10 cks.		
			Chemicals (otherwise undies.)—		
			Hamburg, 2 t. 10 c.	£89	
			Boston, 19	2 q. 380	
			Odessa, 2	0 1	62
			Piraeus, 12	18	

Danzig, 9	14	Oxalic Acid—		Lagos, 625 bgs.		Melbourne, 203	40
Stettin, 1	1	Boston, 10 t.	£310	Manoh, 4,480		Montreal, 820	8 tcs. 24
Alexandria, 1	31	Paint—		Manaos, 200 cs.	500	Naples, 20	24
Alexandretta, 1	9	Alexandria, 50 kgs.	4 cks.	M. Video, 20 t.	30,531	New York, 1,050	33 56
Mersyne, 6	9	Algoa Bay, 1-0		Montreal, 65		Oporto, 248	133 92
Calcutta, 15	8 2	Belize, 51	15 dms.	New York, 50		Philadelphia, 19	84
China Clay—		Beyrout, 51	40	Odense, 8		Portland, 2,646	381
Bombay, 680 cks.		Boma, 100	40	Pt. Elizabeth, 37		Rotterdam, 2,646	381
Boston, 1,184		B. Ayres, 100	40	Reykjavik, 115		San Francisco, 381	25
B. Ayres, 80		Cadiz, 3		Rio Del Rey, 5	0 c.	Santos, 25	234
Calcutta, 600		Calcutta, 13	1 cs.	Rouen, 592		Sydney, 100 brls.	
Pernambuco, 120		Gibraltar, 13	1 cs.	St John's, 592		Sydney, 100 brls.	
Philadelphia, 312 cks.	250 bgs.	Half Jack, 40	20 dms.	Santos, 1	2	Vancouver, 40 kgs.	94
Pineus, 200		Havana, 40	1 cs.	Sierra, 174		Venice, 94	
Rio de Janeiro, 40		Malta, 40	20 dms.	Trinidad, 34	5	Soda Crystals—	
Citric Acid—		Manila, 40	1 cs.	Vancouver, 828		Adelaide, 34 kgs.	
St. Petersburg, 1 t.	13 c.	Manaos, 320	4	Salt Cake—		Bombay, 225	20 cks
Coal Products—		Nagasaki, 320	1	Bremen, 304 t.	4 c.	Boston, 400	30 brls.
Aniline Co.ours		Porto Alegre, 275	8	Saltpetre—		B. Ayres, 400	30 brls.
Shanghai, 10 cs.		Punta Arenas, 275	7	Para, 1 t.	10 c.	Calcutta, 10 bgs.	2
Yokohama, 2		Rio de Janeiro, 14	8	Hamburg, 6	£23	Gibraltar, 24 kgs.	2
Aniline Oil		St. John's, 14	1	New York, 10	111	Halifax, 20	80
Gibraltar, 14 pks.		Santiago de Cuba, 80 dms.	24	Sheep Dip—		Malta, 150	354 100
Montreal, 2 dms.		Sydney, 24		M. Video, 33 t.	£800	Montreal, 90 bgs.	594 pks.
Aniline Salts		Painters' Colours—		B. Ayres, 98	9 c.	New York, 25 kgs.	560 cks.
Boston, 103 cs.		Hamburg, 11 pks.		Boca, 15	1 q. 2,006	Pt. Natal, 40 bgs.	
Montreal, 40		Karachi, 4 cks.	18 kgs.	Soap—		Valencia, 40 bgs.	
New York, 40	37 cks.	New York, 31	18 kgs.	Acera, 200 bks.		Valparaiso, 100	
Creosote		Para, 29		Akassa, 15		Sodium—	
Lisbon, 85 cks.		Patras, 31		Alexandria, 60	61 cs.	Hamburg, 1 t.	4 c.
Naphthaline		Piraeus, 36 brls.	130 702	Algoa Bay, 1,600	30	Sodium Acetate—	
Antwerp, 200 bgs.		Rangoon, 31 bks.	40	Antwerp, 50		Vera Cruz, 2 cks.	
Naphthol Colours		Rio de Janeiro, 31 bks.	40	Asim, 1,644		Sodium Bicarbonate—	
New York, 4 pks.		Rio Grande Do Sul, 4 cks.	27	Barbadoes, 100		Alexandria, 10 kgs.	2 cks.
Pitch		Rouen, 6		Beira, 2,520	114	Algiers, 145	14
Antwerp, 23 brls.		Savannah, 10	10 cs.	Calcutta, 414	70	Bombay, 635	23
Cette, 705 t.		Antwerp, 10		Cameroon, 5		Bordeaux, 15	
Galatz, 30		Bahia, 10		Candia, 125	5	B. Ayres, 725	6
Ibrail, 45		Barcelona, 120 bgs.	5	C. C. Castle, 279		Calcutta, 1,925	4
La Rochelle, 597.		Hamburg, 12		Cape Town, 5		Genoa, 140	16 brls.
Para, 20	2 cks.	Jaffa, 10		Carbonea, 30		Halifax, 100	16 brls.
Rouen, 5		Trieste, 5		Casamance, 30		Hio, 300	
Sydney, 5		Venice, 5		Conakry, 30		Karachi, 545	
Tar		Phosphorus—		Constantinople, 20		Konigsberg, 160	
Galatz, 155 brls.		San Luis Potosi, 10 c.	£116	Copenhagen, 319		Lisbon, 40	
Hamburg, 118		Monterrey, 10	116	Curaco, 675		Marseilles, 145	
Ibrail, 75		Vera Cruz, 18	2 q. 198	Delagoa Bay, 225		Montreal, 390 bgs.	40
Philadelphia, 350		Hio, 5 t.	10	Dubreka, 100	100	Nantes, 20	
Santoa, 16 cks.		Yokohama, 1	18	E. London, 345	20	Odessa, 200	
Tar Salts		Shanghai, 18		Gibraltar, 202	730	Palemo, 20	
St. Petersburg, 32 kgs.		Picric Acid—		Guayaquil, 102		Pt. Natal, 60	
Copper Sulphate—		New York, 1 t.	£125	Havre, 730		Rangoon, 470	70
Bari, 1 t.	8 c.	N. Orleans, 1	15 c.	Karachi, 102		Rouen, 217	2 cs.
Konigsberg, 2	30	Potassium Bicarbonate—		Lagos, 64		San Francisco, 2 cs.	
Bombay, 5	78	Antwerp, 3 t.	£124	Landana, 50		Smyrna, 50	110 pks.
St. John's, Nfd., 1	16 2 q.	Potassium Bichromate—		Madras, 5		Trieste, 50	
Cette, 115	8 1	Vera Cruz, 2 cks.	£15	Malta, 42		Venice, 20	
Smyrna, 12	1	Piraeus, 2 t.	85	Mandji, 25		Sodium Carbonate—	
Antwerp, 9	17	New York, 2	10 c.	Manaos, 780		New York, 84 brls.	
Braila, 5	78	B. Ayres, 16	2 q.	Matadi, 134	1,090	Sodium Chlorate—	
Tampico, 15	1	Potassium Carbonate—		Montreal, 1,090		Fairwater, 100 kgs.	
Salonica, 1	19	Valencia, 2 t.	9 c.	M Pongwe, 40		Hamburg, 40	
Halifax, 5	4	Montreal, 5	2 q.	New York, 200	4	Rotterdam, 30 brls.	
B. Ayres, 25	3	Potassium Chlorate—		Para, 21	300 pks.	Sodium Hypsulphite—	
Vigo, 10	1	San Luis Potosi, 2 t.	10 c.	Piraeus, 21		Montreal, 275 kgs.	
Patras, 151	2	Monterrey, 2	10	Pt. Elizabeth, 100		New York, 113 cks.	
Stamboul, 2	10	Stockholm, 5	172	Pt. Said, 2,455	20 dms.	San Francisco, 13 t.	19 c.
Sydney, 3	18	Calmar, 1	5	Rangoon, 100		Sodium Silicate—	
Bourgas, 1	3	Hio, 2	10	Rotterdam, 150	1	New York, 10 brls.	
Varna, 1	10	St. Petersburg, 20	601	St. John's, 341		Sodium Sulphate—	
Hamburg, 9	19	Hamburg, 1	30	Salonica, 95	1,422	San Francisco, 79 cks.	
Vigo, 50	7	Sydney, 3	96	Shanghai, 144		Starch—	
Kurrachee, 2	10	Gothenburg, 9	14	Sierra Leone, 1,700		Alexandria, 50 cs.	
Rouen, 20	1	Melbourne, 2	2	Singapore, 66		Sulphur—	
Boston, 2	9	Libau, 5	150	Smyrna, 300		Mayaguez, 2 c.	2 q. 10
Portland, On., 20	1	Rotterdam, 2	14	Vera Cruz, 500		Pt. Said, 6	
Genoa, 29	18	Potassium Cyanide—		Victoria, B. C., 500		Parnahyba, 1 t.	
Rio de Janeiro, 3	9	Philadelphia, 5 t.	£502	Soda—		Boston, 50	2
Catocolo, 14	16	Potassium Prussiate—		New York, 4 cks.		Para, 10	5
Calamata, 23	7	Vera Cruz, 1 t.	1 c.	Soda Alkali—		Superphosphates—	
Rotterdam, 10	9	Piraeus, 2	£53 6	Corinto, 120 brls.		Cullera, 100 t.	3 c. 3 q. 2000
Copperas—		Potassium Stannate—		Galatz, 50		Valencia, 130	4 1 320
Messina, 1 t.	£2	Bombay, 1 t.	11 c.	Quebec, 35		Varnish—	
Disinfectants—		Salt—		Soda Ash—		Madras, 5 cs.	
Calcutta, 17 c.	£31	Adelaide, 10 c.		Barcelona, 12 cks.		Montreal, 21 pks.	
New York, 1 t.	50	Amsterdam, 190 t.	4,300 sks.	Bombay, 28		New York, 4	
Guano—		Bari, 13	7	White Lead—		Antwerp, 501 t.	15 c.
Malaga, 30 t.	13 c.	Batanga, 7	6	Sydney, 52 brls.		Zinc Chloride—	
Bordeaux, 5	30	Boston, 100		Zinc Oxide—		Varna, 18 t.	10 c. £371
Lime—		B. Ayres, 126	18			Bombay, 2	15
Addah, 6 t.	14 c.	Calcutta, 2,760				Boston, 6	5
Magnesia—		Cameroon, 500 bgs.	2,500				
Barcelona, 5 cs.		Cape Lopez, 200					
Salonica, 3 cks.		Conakry, 9,451					
Mayaguez, 4 c.	1 q.	Copenhagen, 163 t.					
Magnesium Chloride—		Copenhagen, 213 bgs.					
Singapore, 15 c.	£4	Egwanga, 500					
Magnesium Sulphate—		Ghent, 110 t.	1,500				
New York, 10 cs.							
Portland, 21 brls.							
Rio de Janeiro, 1 t.	6 c.						
Manure—							
Las Palmas, 25 t.	£192						

MANCHESTER.

Week ending November 3 d.

Albumen —	
Rouen, 4 cks.	
Ammonium Carb. nate —	
Hamburg, 16 cks. 3 cs. 11 kgs.	
Aniline Colours —	
Hamburg, 1 cs. 32 kgs.	
Rotterdam, 2 cks.	
Aniline Oil —	
Rotterdam, 5 tins.	
Aniline Salts —	
Rotterdam, 1 ck. 5 dms.	
Carbolic Acid —	
Rouen, 5 cks.	
Carbon Bisulphide —	
Christiania, 2 dms.	
Colours —	
Rouen, 2 cks.	
Glue —	
Rotterdam, 22 cks.	
Nitrotoluidine —	
Rouen, 1 kg.	
Pitch —	
Antwerp, 2,449 c.	
Cette, 1,160 t. 5	
Potassium Chlorate —	
Rouen, 2 cks.	
Sodium Silicate —	
Hamburg, 1 cs.	
Tar Oil —	
Antwerp, 5 dms.	
Toluol —	
Hamburg, 35 dms.	
Rotterdam, 24	

HULL.

Week ending October 30th.

Ammonium Sulphate —	
Dunkirk, 55 bgs.	
Barium Carbonate —	
Stettin, 150 t.	
Chemicals (otherwise undescribed)	
Amsterdam, 145 cks. 20 pks.	
Abo, 4 100 kgs.	
Bremen, 1	
Constantinople, 10	
Christiania, 922 slbs. 55	
Copenhagen, 2 cks. 10	
Göteborg, 11 5 cs. 30	
Hamburg, 180	
New York, 99 100	
Odessa, 58	
Rotterdam, 56 28	
Stettin, 17	
Coal Products (otherwise undes.) —	
New York, 500 brls. 37 dms.	
Cottonseed Oil —	
Amsterdam, 404 c.	
Antwerp, 105	
Bremen, 150	
Copenhagen, 100	
Dunkirk, 307	
Göteborg, 52	
Hamburg, 1,341	
Harlingen, 210	
Rouen, 634	
Rotterdam, 76	
Stettin, 674	
Creosote —	
St. Petersburg, 30 cks.	
Dyestuffs (otherwise undescribed)	
Stettin, 1 cs.	
St. Petersburg, 5	
Glue —	
New York, 33 cks.	
Guano —	
Dunkirk, 500 sks.	
Linseed Oil —	
Aalesund, 18 c.	
Christiania, 102	
Copenhagen, 17	
Drontheim, 11	
Hamburg, 62	
Rotterdam, 100	
Stavanger, 175	
Mineral White —	
Antwerp, 200 bgs.	
Hamburg, 30	
Painters' Colours —	
Amsterdam, 18 cks. 1 cs. 2 pks.	
Antwerp, 6 2 1 dm.	
Boston, 25	
Christiania, 1	
Copenhagen, 31	
Dunkirk, 2	
Göteborg, 13	
Hamburg, 12 5	

Harlingen, 7	
Königsberg, 41	
New York, 40	
Rouen, 11	
Rotterdam, 7	
Stettin, 2 1	
Stockholm, 2 1	
Pitch —	
Antwerp, 80 t.	
Dunkirk, 228	
Rotterdam, 2	
Soap —	
Amsterdam, 25 bxs.	
Christiania, 9 cs.	
Drontheim, 75	
Göteborg, 1	
Starch —	
Copenhagen, 60 cs	
Tallow —	
Stockholm, 26 cks.	
Göteborg, 2	
Tar —	
Amsterdam, 6 cks.	
Antwerp, 6	
Copenhagen, 10	
Drontheim, 5	
Hamburg, 10	
Rotterdam, 7	
Turpentine —	
Christiania, 3 cks.	
Varnish —	
Amsterdam, 1 dm.	
Rotterdam, 3 cs	
Stettin, 9 cks.	
Whiting —	
Boston, 7 cks. 20 bgs.	

GLASGOW.

Week ending November 4th.

Albumen —	
U.S.A., 134	
Ammonium Carbonate —	
Stockholm, 692	
Ammonium Sulphate —	
Nantes, 10 t. 1½ c.	
Bleaching Powder —	
Valparaiso, 1 t. 6½ c.	
Borax —	
Christiania, 12 c.	
Castor Oil —	
Fremantle, 28	
Caustic Soda —	
Canada, 15 t. 4 c.	
Chemicals (otherwise undescribed)	
Rotterdam, 10	
Citric Acid —	
Christiania, 1 c.	
Coal Products —	
Benzol, 17 t.	
Creosote Oil, 104	
U.S.A., 30	
Christiania, 10	
Pitch —	
Amsterdam, 200 t. 777	
Spezzia, 100	
Tar —	
Amsterdam, 9 t. 9 c. 100	
Hamburg, 125	
Rotterdam, 212	
Coal Products (otherwise undes.) —	
Calcutta, 2 c.	
Rotterdam, 2 c.	
Cottonseed Oil —	
Bodo, 3 c.	
Dyestuffs (otherwise undescribed)	
Rotterdam, 63	
Extracts —	
Hamilton, Ont., 347	
Montreal, 110	
Christiania, 20	
Cape Colony, 193	
Canada, 984	
Heipeler, 67	
Gelatine —	
Algoa Bay, 38	
Iodine —	
Rotterdam, 1,300	
Linseed Oil —	
Hong Kong, 3 t. ¼ c.	
Litharge —	
Montreal, 254	
Logwood —	
Canada, 40	
Oporto, 60	
Paint —	
Colombo, 27	
E. London, 27	

Montegn, 27 125.	
Pt. Said, 40	
Shanghai, 88	
Painters' Colours —	
Cape Town, 110	
Hio, 67	
Hong Kong, 132	
Natal, 32	
Singapore, qty.	
Oporto, 180	
Paraffin Wax —	
Nantes, 27	
Christiania, 60	
Cape Town, 27 108.	
Stockholm, 1,000	
Potassium Bichromate —	
Hio, 380	
Canada, 244	
Oporto, 154	
Potassium Cyanide —	
Transvaal, 96	
Sodium Bichromate —	
Nantes, 5 t. 12½ c.	
Oporto, 1 6½	
Starch —	
Rotterdam, 11 c.	
Sulphuric Acid —	
Payia, 48	
Tallow —	
Rotterdam, 23 t. 15 c. 150	
Treacle —	
Christiania, 2 t. 2½ c.	
Stockholm, 43 10½	
Aalesund, 11 19	
Stockholm, 26 5	
White Lead —	
Fremantle, 72	

TYNE.

Week ending October 30th.

Alkali —	
Amsterdam, 24 t. 18 c.	
Hamburg, 3 4	
Antwerp, 1 11	
Rotterdam, 4 15	
Helsingfors, 2 8	
Bergen, 2 17	
Alum —	
Rotterdam, 20 t. 7 c.	
Aluminous Cake —	
Montreal, 64 t. 18 c.	
Ammonium Carbonate —	
Bergen, 13 c.	
Ammonium Sulphate —	
Barcelona, 5 t.	
Antimony —	
Hamburg, 6 t.	
Rotterdam, 7 10 c.	
Arsenic —	
Barcelona, 8 c.	
Barium Binoxide —	
Hamburg, 2 t. 6 c.	
Antwerp, 10 13	
Barcelona, 1 2	
Blanc Fixe —	
Montreal, 14 t. 17 c.	
Bleaching Powder —	
Stockholm, 40 t.	
Amsterdam, 5 7 c.	
Copenhagen, 55 14	
Hamburg, 19 19	
Antwerp, 30 2	
Rotterdam, 29 18	
Bergen, 5 10	
Helsingfors, 19 17	
Kotka, 400	
Ergasteria, 1	
Bergen, 30 9	
Borax —	
Ergasteria, 2 c.	
Caustic Soda —	
Stockholm, 10 t. 14 c.	
Barcelona, 22 19	
Amsterdam, 1 16	
Copenhagen, 2 18	
Hamburg, 29 11	
Rotterdam, 1	
Odense, 1 9	
Montreal, 46 8	
Harlingen, 10 10	
Helsingfors, 7 2	
Christiania, 2 18	
Vera Cruz, 88 14	
Coal Products —	
Creosote Oil	
Rouen, 2 t.	
Pitch	
Rouen, 20 t. 3 c.	

Iron Oxide —	
Smyrna, 11 t. 14 c.	
Litharge —	
Stockholm, 5 t. 1 c.	
Amsterdam, 1 3	
Montreal, 26 13	
Helsingfors, 6 2	
Christiania, 6	
Magnesia —	
Hamburg, 3 t. 4 c.	
Rotterdam, 9	
Christiania, 1 cs.	
Barcelona, 5 18	
Paint —	
Hamburg, 2 t.	
Antwerp, 1 c.	
Rotterdam, 2	
Helsingfors, 10	
Bergen, 10	
Phosphorus —	
Barcelona, 1 t. 9 c.	
Saltpetre —	
Aalborg, 5 t. 7 c.	
Soda —	
Stockholm, 61 t. 18 c.	
Amsterdam, 52 3	
Randers, 28 1	
Antwerp, 5	
Rotterdam, 41 5	
Ancona, 10	
Helsingfors, 5 5	
Abo, 3	
Christiania, 33 9	
Ergasteria, 12	
Soda Ash —	
Stockholm, 100 t. 11 c.	
Hamburg, 20 9	
Hango, 7 4	
Sodium Hyposulphite —	
Montreal, 10 t. 5 c.	
Sodium Silicate —	
Malta, 10 t. 3 c.	
Sodium Sulphate —	
Skutskar, 1,050 t.	
Christiania, 100	
White Lead —	
Hamburg, 10 c.	
Montreal, 60 t. 3	
Witherite —	
Rotterdam, 150 t.	

GOOLE.

Week ending October 27th.

Alkali —	
Antwerp, 19 cks.	
Benzol —	
Boulogne, 75 cks.	
Chemicals (otherwise undescribed)	
Amsterdam, 40 cks.	
Antwerp, 1 cs.	
Boulogne, 3	
Hamburg, 19 20 drs	
Coal Products (otherwise undes.) —	
Amsterdam, 2 cks. 1 cs. 20 drs.	
Antwerp, 2 cks. 1 cs.	
Boulogne, 76 1	
Ghent, 1	
Rotterdam, 75	
Colours —	
Ghent, 8 cks.	
Rotterdam, 1 cs.	
Dyestuffs (otherwise undescribed)	
Ghent, 59 bgs. 1 cs. 1 pk.	
Hamburg, 1 cs	
Manure —	
Dunkirk, 213 bgs.	
Pitch —	
Antwerp, 740 t.	

GRIMSBY.

Week ending October 30th.

Alkali —	
Hamburg, 11 cs.	
Rotterdam, 1 ck.	
Caoutchouc —	
Göteborg, 4 cs.	
Coal Products (otherwise undes.) —	
Hamburg, 50 cks.	
Colours —	
Antwerp, 1 ck. 1 cs.	
Hamburg, 1	
Rotterdam, 3	
Tar —	
Hamburg, 8 cs.	

PRICES CURRENT.

WEDNESDAY, NOV. 10TH, 1897.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.B. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary

Acids:—		£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/9	&	8/9
Glacial				40/-
Arsenic S.G., 2000°		1	4	0
Fluoric	per lb.	0	0	3 3/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0	10
(Cylinder), 30° Tw.		0	3	0
Nitric 80° Tw.	per lb.	0	0	1 3/4
Nitrous		0	0	1 3/4
Oxalic	nett	0	0	3 1/2
Phosphoric, 1750°		0	0	11 1/2
Picric		0	0	11
Sulphuric (fuming 50 %)	per ton	15	10	0
(monohydrate)		5	10	0
(Pyrites, 168°)		3	0	0
(free from arsenic, 145°)		1	5	0
Sulphurous (solution) S.G. 1025		3	0	0
Tannic (pure)	per lb.	0	1	2 1/2
Tartaric		0	1	1 1/2
Arsenic, white powdered	nett per ton	21	15	0
Alum (loose lump)		4	10	0
Alumina Sulphate (pure)		4	2	6
Aluminoferrous		2	3	6
Aluminium (Ingot metal 98/99 3/4 %)	nett	14	8	0
Ammonia, Anhydrous	per lb.	0	1	3
" 880=28° B.		0	0	2 3/4
" =24° B.		0	0	1 3/4
" Carbonate	nett	0	0	3
" Muriate	per ton	18	0	0
" (sal-ammoniac) 1st & 2nd	per cwt.	33/-	&	31/-
" Nitrate	per ton	31	0	0
" Phosphate	per lb.	0	0	3 1/2
" Sulphate (grey) London	per ton	8	10	0
" (grey) Hull		8	12	6
Aniline Oil (pure)	per lb.	0	0	7
Aniline Salt		0	0	7
Antimony	per ton	29	0	0
" (tartar emetic)	per lb.	0	0	8
" (golden sulphide)		0	0	10
Barium Chloride	per ton	6	10	0
" Carbonate (native)		3	10	0
" Sulphate (native levigated)		42/6	to	65/-
Bleaching Powder, 35 %	nett	6	2	6
" Liquor, 7 %		3	10	0
Bisulphide of Carbon		12	0	0
Chromium Acetate (crystal)	per lb.	0	0	6
Calcium Chloride	per ton	2	5	0
China Clay (at Runcorn) in bulk		15/-	to	30/-
Coal Tar Products and Dyes:—				
Alizarine (artificial) 20 %	nett per lb.	0	0	6 3/4
Magenta		0	3	0
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0	0	6
Benzol, 90's	per gallon	0	1	11
" 50/90		0	2	1
Carbolic Acid (crude 60°)	per gallon	0	2	0
" (crystallised 40°)	per lb.	0	0	6 3/4
" (liquid 95/97 %)	per gallon	0	1	0
Creosote (ordinary)		0	0	2 1/2
" (filtered for Lucigen light)		0	0	3
Crude Naphtha 30 % @ 120° C.		0	0	10
Grease Oils, 22° Tw.	per ton	2	15	0
Pitch, f.o.b. Liverpool or Garston		0	8	0
Solvent Naphtha, 90 % at 160°	per gallon	0	1	8
Copper	per ton	47	18	9
" Sulphate		16	5	0
" Oxide (copper scales)		44	10	0
Glycerine (crude)		24	10	0
" (distilled S.G. 1250°)		40	0	0
Iodine	nett, per oz.	0	0	7 1/2
Iron Sulphate (copperas)	per ton	1	10	0
" Sulphide (antimony slag)		2	0	0
Lead (sheet)		14	2	6
" Litharge Flake (ex ship)		17	0	0
" Acetate (white)		23	0	0
" brown		17	0	0
" Carbonate (white lead) pure		17	0	0
" Nitrate		20	0	0
Lime, Acetate (brown) (ex ship)	per ton	5	10	0
" (grey) (ex ship)		8	0	0
Magnesium (ribbon and wire)	per oz.	0	2	3
" Chloride (ex ship)	per ton	2	10	0
" Carbonate	per cwt.	1	17	6
" Calcined Magnesia	per ton	8	0	0
" Sulphate (Epsom Salts)	per ton	2	15	0
Manganese, Sulphate		16	0	0
" Borate	per cwt.	2	10	0
" Ore, 70 %	per ton	3	10	0
Methylated Spirit, 61° O.P.	per gallon	0	1	8
Naphtha (Wood), Solvent		0	2	9
" Miscible, 60° O.P.		0	3	7
Oils:—				
Cotton-seed	per ton	16	10	0
Linseed		16	10	0
Stearine	per ton	22	0	0
Phosphorus (yellow)	per lb.	0	2	2
(red)		0	2	8
Potassium (metal)	per oz.	0	3	7
" Bichromate	nett per lb.	0	0	4 1/2
" Carbonate, 90% (ex ship)	per ton	16	10	0
" Chlorate	per lb.	0	0	3 1/4
" Cyanide, 98%		0	1	1
" Hydrate (Caustic Potash) 90 %	per ton	23	10	0
" (Caustic Potash) 75/80 %		19	15	0
" Potash Hydrate Liquid 50 %		11	5	0
" Nitrate (refined)	per cwt.	1	1	6
" Permanganate	per cwt.	3	15	0
" Prussiate Yellow	per lb.	0	0	6 1/4
" Sulphate, 90 % (ex ship)	per ton	9	15	0
" Muriate, 80 % (do.)		8	10	0
Silver (metal)	per oz.	0	2	2 3/4
Sodium (metal)	per lb.	0	2	9
" Carb. (refined Soda-ash) 48 %	nett per ton	4	15	0
" (Caustic Soda-ash) 48 %		4	5	0
" (Carb. Soda-ash) 48 %		4	0	0
" (Alkali) 58 %		3	17	0
" (Soda Crystals)		2	5	0
" Acetate (ex-ship)		10	10	0
" Arseniate, 45 %		14	7	6
" Chlorate	per lb.	0	0	4 1/2
" Borate (Borax)	net, per ton	14	15	0
" Bichromate	per lb.	0	0	3 3/4
" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton		8	10	0
" (74 % Caustic Soda)		8	2	6
" (70 % Caustic Soda)		7	7	6
" (60 % Caustic Soda)		6	7	6
" (pure liquor 90° Tw.)		3	12	6
" 77/78 % powdered (99 % hydrate)		12	10	0
" Bicarbonate		6	10	0
" Hyposulphite		5	5	0
" Manganate, 25 %		15	0	0
" Nitrate (95 %) ex-ship Liverpool	per cwt.	0	7	6
" Nitrite, 98 %	per ton	26	10	0
" Phosphate		9	10	0
" Silicate (glass)	per ton	4	10	0
" (liquid, 100° Tw.)		3	7	6
" Stannate, 40 %	per cwt.	3	2	9
" Sulphate (Salt-cake)	per ton	0	19	0
" (Glauber's Salts)		1	7	6
" Sulphide		6	15	0
" Sulphite		5	0	0
Strontium Hydrate, 100 %		10	15	0
Sulphocyanide Ammonium, 95 %	per lb.	0	0	5 1/2
" Barium, 95 %		0	0	4
" Potassium		0	0	6 1/2
Sulphur (Flowers)	per ton	7	10	0
(Roll Brimstone)		6	10	0
" Brimstone: Best Quality		4	10	0
Superphosphate of Lime (26 %)		2	5	0
Tallow (Beef)		18	10	0
Tin Crystals	per lb.	0	0	4 1/4
" English Ingots	per ton	63	0	0
Zinc (Spelter)		17	17	6
" Chloride (solution, 100° Tw.)		5	15	0
" Sulphate, Crystal		5	15	0

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Vol. XXI.

Contents.

PAGE	PAGE
Current Topics	Exports of Petroleum from U.S.A. 327
British and Foreign Patent Regula- tions	Correspondence
321	Manchester Sewage-Scheme
322	The Committee of Dangerous Trades
323	328
The Patent List	Tar and Ammonia Products
323	328
Abstracts of Latest Complete Speci- fications	Miscellaneous Chemical Market ..
323	328
Imports and Exports for October ..	Report on Manure Material
323	329
Official Memoranda	Liverpool Oil and Colour Market ..
324	329
How German Travellers are Trained	Hull Paint, Oil, and Colour Report ..
325	329
Legal Intelligence	West of Scotland Chemicals
325	329
Oxygen Rescue Apparatus for Mines	Tyne Chemical Report
325	329
Reports of Companies	New Companies
326	329
Selected Correspondence	Imports
326	330
Memoria Bust of Faraday	Exports
327	332
Action of Cyanides on Gold	Prices Current
327	336
Determination of Lime in Calcined Magnesite	
327	

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CURRENT TOPICS.

BE WISE IN TIME.

EXPERIENCE is the best of teachers, and yet it is astonishing how hardly we learn by it. Most people would think that the Maidstone epidemic would be a warning to all local authorities, and that they would be glad to inquire into the quality of their water supply; yet the majority are disposed to bury their heads in the sands of forgetfulness and disregard. If anyone scrapes the sand away they are annoyed. With their ears and eyes stopped, they are able to conjure up a sense of security which causes them to imagine there is wisdom in the familiar it-has-never-happened-yet-and-so-it-never-will kind of policy. But when a typhoid whirlwind scatters the sand, and the gravity of the past neglect is seen and comprehended, then it is customary to blame the sand, and exonerate those who wilfully plunged their heads under it.

It is to be hoped that Rural Councils will be warned in time by the Maidstone case, and also by the methods of some members of the Nantwich Rural Council. The Medical Officer of Health and the Engineer reported 177 houses at Audlem with pumps; the water from half this number was suspicious. There were also 247 houses either with no proper supply or else drawing from sources periodically polluted.

Now there is no need to think that such a statement is an insult to the district, as so many Rural Councillors are inclined to assume. It is not a very creditable state of affairs, it is true, but it is far more creditable to be up and doing something to remedy undesirable conditions, than to get angry because they exist, and declare that they cannot be. One worthy Nantwich Councillor affords an example, for he dubs the above revelation "a piece of official extravagance." We think we are safe in concluding that he meant exaggeration—but that's a trifle. Now the basis of this condemnation is that it is ever so long since there was an epidemic at Audlem. Where the logic of such an argument comes in, is a puzzle which only the special intellect peculiar to Rural Councillors can profess to solve, and then the argument is often so tortuous and maze-like, that when the solution is reached, it scarcely fits the original difficulty. Eventually, in this Nantwich case, a sound majority carried the resolution that the property owners be called upon to provide proper water supplies.

This step is in the right direction, but calling for pure water and getting it are two different things. It generally happens that such calls are as effective as calling on Baal for fire.

SUPPRESSING SMOKE.

We have much sympathy with the Manchester and Salford Smoke Abatement League. They have done good, and their intentions are even better, but as we have often said, they have the wrong bull by the horns.

Manchester they seem to have "purified," so now a depr

tation has been urging the Salford Council to apply the screw. Clergymen seemed to be very plentiful on the deputation, and their utterances were as practical as could be expected when you employ a watchmaker to bore a Maxim gun in a jeweller's lathe with a bow-string drill.

Black smoke never killed anybody yet, but it has endowed hospitals and schools for the Church and many other denominations. Flowers and trees certainly do not thrive in Salford, but neither do orchids grow at the North Pole. It would be nice for Nansen and others to while away the sunless days of the arctic regions in orchid cultivation. What is more, if there were no ice they could reach the Pole. Let us therefore abate ice and then erect greenhouses at the Pole. But when this was done we should have no Northern arctic regions; and so, exit black smoke, exit industries. The existence of the former may not be essential, but herein lies the difference between ice and smoke abatement. Domestic smoke is a waste of heat, and the foundation of fogs, but it is left to its own devices, unrestricted. Black smoke, by which is usually meant manufacturing smoke, is essential to many industries, and will be till we are well on into the next century.

The time for the emission of black smoke in Manchester is now practically *nil*; in Salford five minutes in the hour are permitted. Is it a point to boast of in the face of the words of the Mayor of Salford—and they are wise words? He said to the deputation:

"He thought that more had been done in Salford in endeavouring to lessen the smoke nuisance than they had received credit for. Thousands of pounds had been spent by employers in the borough of late in rearranging their boilers and engines in consequence of the pressure put upon them by the Health Committee of the Corporation. Manchester had prosecuted on all hands, and Manchester could not now be called a manufacturing town. It was now a commercial town, and large firms who formerly had workshops in the city had now only offices there, having removed their works to outside districts."

They have thawed the ice, and with it industries have melted away.

Now, touching the complaint against the number of badly-constructed furnaces in Salford, we heartily support the plea for remedy. Hammer away till it comes. Black smoke from boilers is unnecessary—suppress it by all means; but there must be discrimination, or else the effects of wholesale prosecution will be far more disastrous in Salford than in Manchester. It is over this lack of discrimination that we join issue with the work of this high-minded League, and such discrimination can only be exercised by experienced, technical inspectors. Spend the funds of the Association on such men instead of on Police Court proceedings, and the work of the League will "proceed" in another and more effectual way.

TECHNICAL EDUCATION IN RUSSIA.—At a conference held recently between Count Delianoff, Minister of Public Instruction, M. Witte, Minister of Finance, and several other public officials, in order to discuss the question of extending the organisation of technical high schools in Russia, the Minister of Finance intimated that the State would grant a sum of 1½ million roubles for the purpose. It was decided to appoint a committee for further consideration of the question.

TECHNICAL DAY CLASSES AT BATTERSEA.—At a recent meeting of the London County Council, the Technical Education Board reported that in accordance with Mr. Llewellyn Smith's report, the board had offered a special grant of £300 for the current year to the governing body of Battersea Polytechnic for the establishment of day classes in the chemical department in which special attention should be given to the local industries, particularly oils and fats, including soap and candle manufacture, the manufacture of coal gas, and the chemistry of the products of the distillation of coal.

BRITISH AND FOREIGN PATENT REGULATIONS.

DEPUTATION TO THE BOARD OF TRADE.

A DEPUTATION from the Manchester Chamber of Commerce was received on Wednesday, by Mr. Ritchie at the Board of Trade with reference to certain disadvantages under which British industries are now carried on in consequence of important differences between British and foreign patent laws. The deputation consisted of Mr. W. H. Holland (president of the Chamber), Mr. Ivan Levinstein, Mr. Harry Grimshaw, and Mr. Elijah Helm (secretary). The proceedings were private, but it is understood that the principal point to which Mr. Ritchie's attention was drawn was the fact that patent rights are granted to foreign subjects in this country for inventions which cannot be patented in their own.

Mr. Ivan Levinstein referred to the injustice which is done to our inventors and to our commerce by the inequality of the German Patent Law compared with our own. He complained that in practice the German Patent Office, after tedious and vexatious negotiations, frequently refused the grant of a patent on very flimsy reasons, and especially appears this to be the case with foreign applications. Of a hundred patents granted in this country about 40 are either not applied for or refused by the German Patent Office, of which many of the latter specify sufficient novelty to uphold them in our law courts, and a large number of patents rejected by the German Patent Office are granted by the United States Patent Office, after careful preliminary examination. The intellectual property of some of our inventors thus becomes the common property of the German nation. The harm done to our trade must be palpable to every one. Many articles are manufactured in Germany by anyone who chooses to undertake their manufacture, for which foreign patentees hold the monopoly in this country. As no royalty has to be paid, and no other restrictions are attached, the Germans are able to produce and sell these articles at lower prices than they can be made or purchased in this country. A further disadvantage arises from this inequality: The German manufacturers have the opportunity of perfecting the processes of manufacture during the term of fourteen years for which the foreign patentee holds the sole and exclusive right in this country. They are in a position by the profits realised to depreciate the cost of the necessary plant and machinery, and to cultivate and establish a large connection, with the result that, when the monopoly has terminated in this country, instead of British labour deriving any benefit from the monopoly granted by the State, our markets are flooded with articles made in Germany. Thus, monopolies are continued long after the termination of the patent. Mr. Levinstein's next point was that a foreign patentee may continue to hold his British patent, in spite of his foreign patent having lapsed or terminated. In the United States the American patent expires at the same time with the foreign patent, or, if there are more than one at the same time, with the one having the shortest term. As one of many illustrations which might be given, he said that in 1885, for instance, a German firm secured patents in Great Britain and in Germany for the manufacture of an important article. The same firm took an additional patent in 1889 in Germany (*Zusatz* patent), which happens to be of still greater importance than the original, but according to German law the patent of addition terminates with the patent for the original invention. The consequence is that in the year 1900 German and American manufacturers will be at liberty to produce this article, but we in this country will be excluded to make it before 1903. We have no power to influence German patent law or the practice of the German Patent Office, but he thought that we have just now a very good opportunity of discussing, with an ultimate view of removing some of the inequalities of our law.

The International Congress for the protection of industrial property meets next month at Brussels. It is reported that the delegates of the United States are instructed *inter alia* to declare that an American patent granted to a foreign inventor will be invalidated if the latter has failed to secure a patent in his own country. America has apparently at last found out that the existing inequality, which is in our own case even more apparent, has enabled German manufacturers to secure in some instances complete control of their markets.

Mr. Levinstein then submitted to the President of the Board of Trade that our delegates attending the Congress may be instructed to support the American delegates, and that the President may take steps to have our patent laws amended, in as far as a British Patent held by a foreign subject or by one whose domicile is not in England, shall be invalidated if he has either not obtained a patent in his own country, or as soon as his foreign patent has expired by efflux of time or otherwise.

In reply, Mr. Ritchie stated that, although he had considerable sympathy with the desires of the deputation, the matter was by no means free from difficulty. He would, however, give careful attention to the facts and arguments put before him.

Obituary.—It is with great regret we learn of the death of Sir Henry Doulton, on Wednesday evening this week. He did much for chemical engineering by adapting his ware to chemical requirements.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

- Treating Sewage. J. Grossmann. 25,255. November 7.
Machine for Treating Hides, etc. P. Leyendecker. 25,324. November 7.
Chemical-Electric Generators. H. K. Hess. 25,386. November 2.
Slag Wool. W. P. Ingham. 25,458. November 3.
Wood Distillation Products. T. F. Haldane. 25,501. November 3.
Electrodes. J. Hargreaves. 25,519. November 3.
Smoke Prevention. W. Cadman. 25,593. November 4.
Filter Presses. D. Black. 25,611. November 4.
Preparing Peat for Fuel. W. R. Bell. 25,627. November 4.
Air Pumps. C. C. Longridge. 25,635. November 4.
Disintegrating, etc., Clay. A. E. Nicholl. 25,640. November 4.
Preparing Carbonic Acid Gas for Motive Power. A. J. Bale. 25,648. November 4.
Filtering Apparatus. The Reeves Patent Filters Co., Ltd., and W. Reeves. 25,654. November 4.
Improvements in Tanning, etc. W. E. Walker and J. Longshaw. 25,670. November 5.
Electricity from Gas Works' Waste Gases. S. T. White. 25,674. November 5.
Electric Batteries. W. W. Hanscom and A. Hough. 25,701. November 5.
Improvements in Gas Producing Materials. J. Zimmerman. 25,750. November 5.
Electrodes for Accumulators. O. Imray. 25,757. November 5.
Air Pump. W. Evans. 25,781. November 6.
Hamper for Bottles containing Acids, etc. M. C. Delecroix. 25,793. November 6.
Improvements in Manufacture of Gas. A. H. Pöppel. 25,856. November 6.

ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

These abstracts are specially prepared for the Chemical Trade Journal, and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.

Method and Furnace for the Incineration of so-called Garbage and the Recovery of Ammonia therefrom. J. F. G. de Bonardi, 21, Place Vendôme, Paris. Eng. Pat. 29,009. December 17, 1896.

The patent has reference to an elaborate mechanical contrivance for automatically charging the material and passing it first through a distilling chamber at a temperature of about 500°C. and then on into an incinerating chamber at 1,000° to 1,500°C. The ammonia is driven off first and the gases from the incinerator are passed through the distilling chamber so that the atmosphere is a reducing one, this being an advantage claimed over most of the previous processes. The furnace is of the Siemens type. The flue gases are passed through suitable heat-absorbing flues before entering the distilling chamber, so that they become lowered in temperature. The products of distillation are scrubbed to remove the ammonia. There are ten figures showing the automatic, air-tight charging apparatus and other details of the plant. The chief novelty lies in the particular form of construction.

An Improved Method and Apparatus more especially intended for Manufacturing Calcium Carbide, and for the Reduction of Metals from their Oxides. H. Maxim, 377, Norwood-road, London S.E. Eng. Pat. 25,611. November 13, 1896.

A special form of electrical furnace is described. Great stress is laid on the construction of the electrodes for conveying the current to the furnace. Carbon rods are used, and these make sliding contact with the terminals of the source of electricity. These rods are the actual heating conductors, and by preference make contact through a stuffing box as it were, filled with broken carbon or other refractory conductors. The heating conductors can then be removed at the end of each run and fresh carbon rods inserted. There are six drawings which must be consulted for full particulars of the arrangement.

Improved Method of and Apparatus for Detecting and Indicating the Presence of Firedamp in the Atmosphere of Mines and other places. E. L. Mayer, 11, Billiter-square, London. Eng. Pat. 23,822. October 26, 1896.

A gas battery is used to generate a current of electricity, which is conveyed to a galvanometer or other apparatus capable of being actuated by a weak current. By the aid of a relay, another circuit is completed, and an audible and a visible signal is operated. The number of cells in the battery can be regulated, according to the desired sensitiveness. In some cases a single cell is enough. There are four drawings.

An Improved Filter for Sewage Effluents and the like. C. Fell, 95, Lichfield-street, Hanley, Staffs. Eng. Pat. 22,768. October 14, 1896.

The sewage is caused to pass through perforated zinc boxes containing bleaching powder or other precipitant. About 80lbs. of bleach are used to every million gallons of sewage. The effluent, after passing the settling tanks, is again passed through perforated zinc boxes charged with bleach. The boxes are about six inches wide and nine deep, and extend across the ends of the tanks. It is claimed that an effluent of great purity is obtained.

Improved Non-Corrosive, Preserving, and Fire-Resisting Paint. The Non-Corrosive, Preserving, and Fire-Resisting Paint Co., Ltd., Frank White and J. Thomson, all of Cathedral-square, Christchurch, N.Z. Eng. Pat. 23,294. October 20, 1896.

The paint is specially intended for ship's plates and other iron and wooden constructions. In the preparation, flake white is ground in linseed oil in the usual way. A mixture is then prepared by adding ½ oz. of turpentine to ¼ oz. of vitriol, and, lastly, ½ oz. of liquid ammonia is added. This is then mixed with the paint. Finally, small quantities of chlorides of zinc and copper, cyanide of potash, and nitrate of mercury are incorporated where the paint is exposed to the action of sea water. The above quantities are for every ½ lb. of linseed oil, with a sufficiency of flake white.

IMPORTS AND EXPORTS FOR OCTOBER.

THOUGH the Board of Trade returns, as a whole, are not satisfactory this month, the returns for chemicals are better. In the imports, chemicals are lower, but olive oil and petroleum are higher. The exports of alkali, bleaching powder, etc., and manures were higher in value and quantity. Salt does not show an advance.

IMPORTS OF FOREIGN AND COLONIAL PRODUCE.

ARTICLES.	Quantities.	
	1896.	1897.
Margarine	88,639 Cwt.	68,281
Copper Ore and Regulus	18,560 Tons.	19,280
Pyrites	38,276 "	53,330
Tin	75,547 Cwt.	58,372
Alkali	12,024 "	14,416
Brimstone	28,830 "	34,093
Dyes, Coal Tar	69,114 "	59,296
Saltpetre	17,714 Cwt.	15,079
Petroleum	17,169,471 Gall.	19,795,715
Turpentine	29,774 Cwt.	14,552
Guanine	257 Tons.	1,312
Nitrate of Soda	2,383 "	3,245
Paraffin	83,692 "	67,483
Rosin	35,064 Cwt.	56,403
Tallow and Stearine	135,844 "	106,543
Oil Seed Cake	26,702 Tons.	25,275
Wood Pulp	30,588 "	33,474

EXPORTS OF BRITISH AND IRISH MANUFACTURES.

ARTICLES.	Quantities.	
	1896.	1897.
Alkali	447,743 Cwt.	483,891
Cement	32,593 Tons.	35,512
Coal and Coke	3,056,735 "	3,223,926
Copper, all kinds	74,482 Cwt.	102,202
Iron and Steel	344,615 Tons.	340,915
Chemical Manures	26,624 "	34,374
Oils, seed	5,668 "	4,287
Salt	66,436 "	58,184

A MONTH'S TRADE AT LEITH.—At the last meeting of the Leith Dock Commission the following reports of the trade for the past month were submitted:—Revenue for month £8,952, increase £411; revenue for financial year to date £38,006, increase £181. Exports—Coal 58,641 tons, increase 6,167 tons; pig iron 5,701 tons, decrease 1,764 tons; oils 3,619 tons, decrease 866 tons; ale and beer 7,693 tons, decrease 799 tons; sulphate of ammonia 3,342 tons, increase 1,010 tons. Imports—Grain 37,203 tons, decrease 5,327 tons; flour 4,737 tons, decrease 3,918 tons; sugar 8,824 tons, increase 1,516 tons; wood 18,324 tons, increase 10,425 tons. There arrived during the month 528 vessels of 159,528 tons, as compared with 507 vessels of 148,861 tons in the same month last year.

Official Memoranda.

(From the Board of Trade Journal.)

EFFECT OF DINGLEY TARIFF ON GERMANY.

Leipzig Trade.—The exportation of drugs, chemicals, oils, paints, will depend on the capabilities of American similar industries. The former tariff raised the duties on the chemical imports, but it was found did not affect German exports of the finer preparations, for the much higher wages in America necessitated a corresponding high price there, and the profits on the German article were even more than before. It is said the same will be the case now, and that even with further high duties the exportation will not diminish.

Chemicals and Chemical Preparations will, as a whole trade, not be much affected, as it is not much interfered with, so far as is known, by the new duties; and also because the chief German exports—namely, tar colouring matter, scientific and pharmaceutical preparations, and photographic chemicals—are so superior to those of all other states that people cannot do without them.

The only damage that can be feared will be an indirect one through a reduction in the exportation to America of textiles, in which such large quantities of colouring matter are employed.

PRODUCTION OF TARTARIC MATERIALS IN ITALY.

Mr. E. Neville Rolfe, H.M. Consul at Naples, in a report to the Foreign Office, says that the total production of tartaric materials in Italy for the 12 months ended 30th September, 1897, amounted to 9,342 tons, of a value of £366,500. The exports to the United Kingdom were 2,988½ tons; to the United States, 3,470½ tons; to Germany, 509 tons; to France, 216 tons; and to other countries, 2,158 tons.

BEETROOT CULTIVATION IN THE UNITED STATES.

The farmers in the Eastern States of America are in competition with those of the Western States in a manner similar to the competition of European with American agriculturists. Higher rents, over-cultivated soil, and limited area are drawbacks to successful competition with the west when lower prices and lower taxation aid in the opening out of virgin soil. Cereals have, therefore, been more or less abandoned in Eastern States in favour of other more remunerative crops.

Among efforts in this direction should be mentioned, says the French "Journal Officiel," the cultivation of the beetroot.

The United States consumes annually 2,000,000 tons of sugar, or 66 lbs. per head of the population; the home production is only about 300,000 tons, and they are obliged to import to the value of from £16,000,000. to £20,000,000., and it is admitted by financiers and economists that if the United States could be provided with a new agricultural industry by developing the cultivation of the beetroot, the enormous sums annually spent in the purchase of sugar would be retained in the country.

A conference has recently been held at Rome, in the State of New York, of upwards of 900 beetroot farmers, in the course of which it was pointed out that the profit from the cultivation of beetroot should be from £3. to £5. per acre.

Hitherto New York State has only devoted attention to the production of maple sugar; now the cultivation of the beetroot has been commenced in five or six different counties, of which Rome is the centre.

MINERALS IN CHINA.

Kwangsi is one of the most sparsely populated provinces of China. It ranks next to Kansuh in this respect. It contains some 78,250 square miles, and a population estimated in 1890 at 7,500,000; but only a small proportion of the province is capable of cultivation, the country being rugged and mountainous. It is not a wealthy province, though the people must not be considered as extremely poor. By the devastation of the Taiping rebellion, which had its origin in this province, it was largely depopulated and many of its industries destroyed. The three provinces—Yunnan, Kwangsi, and Kweichow—lying together in the south-western corner of China—are alike in this respect that they are rich in natural resources, inhabited largely by aboriginal tribes, and have been laid waste by rebellion (Yunnan by the Mohammedan rebellion in 1855-1873), from which they have not yet recovered. The mountains of Kwangsi are reported rich in minerals—gold, silver, copper, iron, and coal—while Kweichow, in addition to these, has the richest quicksilver deposits known to the world, and Yunnan furnishes copper and salt. As yet, however, the mines are but little worked. The other products of Kwangsi are rice, maize, sugar, cassia, lignea, aniseed, aniseed oil, vegetable oil, and valuable timber. An attempt has been made recently to revive the silk industry, but without much

success. Aniseed trees are cultivated and the oil drawn off by distillation, a trade which is steadily growing and which promises to attain very large proportions. In 1894 the trade in aniseed and aniseed oil amounted to £85,600.

THE ROUMANIAN PETROLEUM INDUSTRY.

In a report which has been received at the Foreign Office from Mr. Hamilton E. Browne, British vice-consul at Bucharest, it is stated that a steamer of the Roumanian Petroleum Company, known as the *Steana României*, has made its first voyage to Austria with 1,200,000 kilograms of refined petroleum on board, as far as the town of Brod on the Save.

This is generally considered as being a most important event in the development of the Roumanian petroleum industry. A further most important factor in its development is also the question of utilizing petroleum residue and lignite in the firing of locomotives.

The experiments made hitherto with this new fuel, and the apparatus "Holden" (so called from the English inventor of that name), have given, it is said, satisfactory results, the amount consumed of these two substances being 1,000 kilos lignite to 300 kilos petroleum residue, the force of heat being easily regulated, and the combustion complete. Only one stoker is required to work the engine, and thus an economy will be made, it is calculated, of from 1,300 francs to 1,400 francs yearly per locomotive; and, besides this, the apparatus can easily be replaced, if necessary, by the usual coal-burning furnace.

The "Holden" apparatus will, it is understood, be copied by a Roumanian firm, "E. Wolff," situated near Tilaret, on the outskirts of Bucharest, at a cost of 400 francs apiece cheaper than in England, this imitation being rendered possible by the non-existence in Roumania of Patent Laws. Twenty of the 450 locomotives in Roumania have already been fitted with this apparatus, it has already been ordered for thirty more, and it is expected that in three years' time this new motive power will be applied to all the locomotives in the country.

As for the quantity of lignite and petroleum residues required for this purpose, the Ministry of Domains has undertaken to supply to the Roumanian State Railways yearly 100,000 tons of lignite, at 7 francs per ton, from the mine of Margineasca; while the residue of petroleum will be delivered, free of transport charges, at the rate of 3 francs 80 centimes per 100 kilos, by the refineries of the "Steana României" Petroleum Company.

The total cost of 100,000 tons of lignite and of the requisite amount of petroleum residue is calculated to amount to 1,740,000 francs, which is estimated as being considerably less than the amount hitherto expended in coal fuel. The Ministry reckons that in this way an economy will be made of 75,000 francs. 125,000 francs will be required for the establishment of the requisite petroleum reservoirs, but it is hoped that as much as 200,000 francs will be economised in the working of the engines, which is estimated at 90,000 francs yearly.

The representatives of the German State Railways, at the conference which took place in Bucharest last May, were conveyed from Bucharest to Sinaia and back by a locomotive worked with this new fuel, and pronounced it to be satisfactory, and it is stated that the Hungarian State Railways contemplate the introduction of this new system on their Transylvanian lines.

The result of the introduction of the lignite and petroleum fuel will undoubtedly be an increase in the production of lignite and petroleum in Roumania, and amongst persons interested in petroleum in that country there is much talk of a group of Dutch capitalists investing a sum of as much as 30 millions of francs in Roumanian petroleum undertakings, and a French contractor from Lille was lately here, and interested himself in the condition of the petroleum industry. On this account the "Steana României" believe that in France persons have occupied themselves with replacing American petroleum by Roumanian.

The most important consideration, however, in connection with the development of the Roumanian petroleum industry is the question whether the quality of the Roumanian oil is sufficiently good. In well-informed circles in Roumania this is stated to be the case, and, as a proof, the fact is quoted that for some time past Roumanian raw petroleum has been exported to Austria and Hungary, and there refined, and that it is there considered as good as the petroleum brought from Russia and Galicia. The inferior quality of the petroleum refined in Roumania is most probably due to the defective state of the refining apparatus employed.

There is no doubt that the replacing of coal fuel on the locomotives by this new fuel composed of lignite and residue of petroleum, in addition to the fact of the introduction of German coal into this country, will further seriously affect the importation of Cardiff coal into Roumania.

THE TASMANIAN TIN INDUSTRY.

The export of tin from Tasmania in the first six months of 1897 amounted to 1,143 long tons, against 2,700 tons in the whole year

output of the Mt. Bischoff mine was well maintained, and continues to pay regular monthly dividends, and up to 1897, it had distributed £1,465,000. Very little tin has been produced in this district this year, however, outside of the big North-eastern District the output of alluvial tin ore was small, owing to the scarcity of water and the lower price of tin. Other extensive deposits are known to exist, however, and under favorable conditions the output will increase. Scarcity of water hampers the production of alluvial tin ore in the Eastern District; shafts are now being erected there to work the tin lodes of the field on a large scale.

The Commissioner of Mines for the North-eastern District reports that as the price of tin keeps at the present figure, he cannot expect improvement in the industry in that district, though, with advance, there would be a revival of prosperity, since there are areas of tin-bearing gravel of moderate richness which have been exploited.

The Eastern District the Anchor Tin Mining Company is making plans to work the Anchor lode on a very extensive scale. It is still with 200 head of stamps, which it is expected will be in operation about the end of this year. A 20-stamp mill is to be built on the Liberator mine, situated not far from the Anchor, and the Australian mine is to be reconstructed. There are large quantities of low-grade tin ore in this district, and the three companies engaged in their exploitation will demonstrate whether they can be made to pay by the aid of modern machinery.

GERMAN TRAVELLERS ARE TRAINED.

Letter to the Foreign Office on the Association for the Promotion of Foreign Commercial Relations with Stettin, published a few days ago, says:—Much has been said and written in England on the superiority of the German technical education in that country, and to this has been attributed in some measure the success which has attended German commercial education within this country. That the technical education is better than that of England, and that the German is more practical and useful conclusion than in England. The question was formed after the conclusion of the Franco-German war by a few leading merchants, assisted by men of consideration who met to consider what steps could be taken to extend the trade of Stettin with distant countries. It was decided that the most efficacious means of increasing Stettin's trade was the better education of clerks and young men who had entered commercial business as a profession. For this purpose even-where to be instituted, and those who attended were to be in all branches of commercial education, geography, and so foreign languages, especially English, Spanish, and French, and private study a library was to be provided. (2.) The British colonies, America, and other parts of the world were to be made known to the young clerks to improve their knowledge of business, and the place of destination in the interests of Stettin trade. This was to be effected each young man so sent should receive a stipend to exceed the amount of 1,500 marks, or about £75, to defray the expenses of travelling to and living for three months in the place to which he desires to go, and has proved his fitness to do so. The repayment of this sum was to be looked upon as a favour, the recipients being expected to return it to the bank when their pecuniary resources permitted. The Consul here can be no question that Stettin trade has been largely increased by this system of emigration. One of the principal duties of the Consul sent abroad is to forward regular reports, if possible monthly, or at least once every three months, in which they are to give a full account of what they have seen and done, and to state the state of the commercial prospects and possible relations in their place of abode and Stettin. The most important point for the Consul's attention is called in making these reports is to give of the legislation, production, and consumption as to prices of goods imported and exported, and also to give their views as to the place in which Stettin may be brought into commercial connection on which they are reporting, or if there is already a connection how this may be extended and improved.

OF CHEMICAL INDUSTRY.—*Nottingham Section.*—The opening of the session will be held on Wednesday, Nov. 10, in Room No. 23, University College, Nottingham at 7 p.m. The Chairman will read a paper on "The unorganised Fermentations concerned in the brewing and distilling Industries," by Mr. J. Sudborough and Mr. M. E. Feilmann will exhibit a new denser.

Legal Intelligence.

MANCHESTER ASSIZES.

NISI PRIUS COURT

(Before Mr. Justice Bruce and a Special Jury.)

STANLEY V. THE MAGNOLIA ANTI-FRICTION METAL COMPANY OF GREAT BRITAIN.

The plaintiff, Mr. Ernest F. Stanley, was represented by Mr. Pickford, Q.C., and Mr. Byrne, and Mr. Sutton appeared for the defendant company. The claim is for commission, salary, and damages for alleged wrongful dismissal. The defendants are the manufacturers of a metal for the reduction of friction in the bearings of machinery according to a patented process which the plaintiff introduced into this country from America seven or eight years ago. As the plaintiff had not the requisite capital to work the patent himself, the Magnolia Metal Company was formed for that purpose, and he was to receive a salary and commission for his services. The parties eventually separated, and the question for the jury is whether, under the circumstances under which the engagement was terminated, the plaintiff is entitled to a certain amount for salary and commission, and some compensation as well. So many letters had to be referred to in the course of the hearing that the judge expressed regret that the case had to be tried at all before a jury. Much better, he thought, it would have been to have had the correspondence laid for an official referee for consideration.

Mr. Sutton said the case for the defendants was practically that the plaintiff, acting in his own interests, discharged himself, and that if he did not discharge himself and the defendants dismissed him, he undertook to abide by the decision of two gentlemen concerned in the company when they had the facts before them. When those gentlemen got the facts before them, they found that the plaintiff was rightly dismissed; and he should not now be allowed to go back upon what he had himself agreed to, and ask the Court to give him damages.—Mr. Pickford, Q.C., argued that there was no evidence in proof of the allegation that the plaintiff had discharged himself, and that there was no conduct on his part which justified the defendants in dismissing him. Even if there were, it was not suggested that he was dismissed, in accordance with the partnership articles, until after the defence to the action was put in, and therefore up to the time of the defence to the action he was entitled to salary amounting to about £120. If he was wrongfully dismissed he was also entitled to damages, which would amount to £222, taking them up to the time when he obtained another employment.—At the close of the Judge's summing up the jury retired, and, after half-an-hour's consultation, agreed to a verdict for the plaintiff for £153. 3s., made up as follows:—Salary £30., damages £120., and £3. 3s. the cost of the plaintiff's ticket as a member of the Royal Exchange.—Judgment was entered in accordance with the terms of the verdict. His Lordship directed that an inquiry should be instituted as to whether the plaintiff was entitled to any and what commission.—Mr. Sutton asked for stay of execution, on the ground that there was no evidence to justify the finding of the jury.—His Lordship said he did not think he could grant a stay on that ground, and declined to accede to Mr. Sutton's request.

OXYGEN RESCUE APPARATUS FOR MINES.

IN connection with the increasing use of the pneumatophore, or oxygen rescue apparatus, in Silesian mines, the subject of erecting depôts for the necessary store of oxygen bottles was lately discussed at a committee meeting of the Upper Silesian Berg und Huttenmannische Verein. It was reported that a large number of collieries in that district now possess pneumatophores, the most important part of which is a bomb filled with compressed oxygen, which can only afford the required supply of oxygen for a comparatively short time, and must then be replaced by a new one, these bombs being filled from large steel cylinders containing on an average 27 cubic feet of oxygen by means of special filling apparatus. After a short discussion as to the necessity for such depôts, the following resolutions were voted:—(1) On account of the fact that all large collieries are now provided with the necessary bombs, steel cylinders and filling apparatus in sufficient number, or will be so shortly, it is sufficient for the present to provide a central store for supplying small mines, as well as a large one in case of special need; and (2) this central station, required at once, should be erected in connection with the Tarnowitz Mining School, which arrangement would have the double advantage of providing the necessary power for permitting of the study as well as the supervision and conduct of the apparatus, so that the pupils of the Mining School, as also its officials, who in future will chiefly have to do with the practical use of the apparatus, may have the opportunity of accustoming themselves to its use.

Reports of Companies.

LIVERPOOL NITRATE CO., LTD.

THE annual meeting of the Liverpool Nitrate Company was held last week at the Law Association Rooms, Cook-street, Liverpool. The directors' report recommended a dividend at the rate of 15 per cent. for the year.

The Chairman, in moving the adoption of the report, said that the result of the past year's working had been most disappointing, caused primarily by the abnormally low prices of nitrate ruling throughout the whole of the year, and, secondly, by what was known as the combination or the agreement amongst nitrate producers to limit their output to the quantity which the market would take. The combination was now at an end, because the abnormally low price ruling obliged the poorer nitrate companies to close their works entirely, notwithstanding the limitation of the output, as it was impossible for them to place nitrate on board and leave any margin of profit at all; and the larger and better nitrate works, among which were their own works, found that to put nitrate on board gave such a narrow margin of profit that it was almost entirely swallowed up in paying expenses during the long compulsory stoppage.

Mr. John Waite seconded the adoption of the report, and the motion was passed.

On the motion of the Chairman, seconded by Mr. F. W. Reynolds, the retiring director, Mr. George Barker, was re-elected. Messrs. Harwood Banner and Son were re-appointed auditors to the company.

THE COLORADO COMPANY.

The annual general meeting of the Colorado Nitrate Company was held last week at the Association Rooms, Liverpool, Mr. Robert Harvey presiding. The report of the directors showed a profit on the year's working of about £6,000, which it was recommended should be carried forward to next account. The directors stated that they were unable to recommend the payment of a dividend out of the profits made in view of the unpromising outlook for the nitrate industry.

The Chairman moved the adoption of the report. He said that possibly it might be asked why the directors, in view of the fair profit that had been made, had not proposed a small dividend to the shareholders. The reason for their adopting this conservative policy of holding the money was because the price of nitrate was now so abnormally low that they had stopped both the works belonging to the company, and they preferred carrying the money forward so as to be enabled to meet any expenses which might be incurred during a possible stoppage of twelve months, and thus avoid the necessity of paying interest to the bank. The directors of the Colorado, however, had decided not to make any nitrate at all at present, and had stopped both their works until the price of nitrate was sufficient to guarantee a reasonable profit on the manufacture.

Mr. Waite seconded the motion, and the report was adopted.

The retiring director, Mr. John Waite, was re-elected, and Messrs. Harwood Banner and Son were re-appointed auditors.

On the motion of the Chairman a vote of thanks was passed to the company's staff on the coast.

This concluded the business.

DIVIDEND.

LONDON NITRATE.—The directors have declared a dividend of 4 per cent on the preference shares, payable 1st prox. The transfer books will be closed from November 16 to November 30, both days inclusive.

FACTORY INSPECTORS AND DANGEROUS TRADES.—In the annual report of the Chief Inspector of Factories and Workshops for 1896 we notice many references to the use of respirators and the use of oxygen as a resuscitant. Acknowledgment is made of our work in this direction by Mr. Rogers, Inspector for Manchester and District. He makes an important communication regarding the illness to which aniline workers are prone. Here again the provision of a cylinder of oxygen is advocated. In all the reports the need for greater cleanliness and care on the part of the employees is recognised. In the matter of fatalities the statistics in the appendix show that the chemical trade does not appear so deadly as some of the writers in popular magazines would have the public understand. Throughout the reports there is an attitude of tolerance, that the chemical trade at least, has to be grateful for, the existence of which confirms our oft-repeated belief that the alkali and factory inspectors should be welcomed rather than be voted a nuisance, since in their experience and calm judgment manufacturers have a powerful antidote for the hysterical articles of the sensation mongers, who have found an eager audience of late in the casual readers of certain popular "monthlies."

Selected Correspondence.

THE MANCHESTER SEWAGE QUESTION.

To the Editor of the Manchester Guardian.

Sir,—The recent poll on the culvert scheme teaches a very plain lesson. The ratepayers of Manchester have shown clearly that they are opposed to spending more money for the disposal of sewage. Now that the Manchester Corporation has received a distinct mandate from the citizens, it is to be hoped that it will have the courage to make a resolute stand against the Mersey and Irwell Joint Committee. The constitution of this Joint Committee, as well as the amended River Pollution Act, ought to be entirely remodelled. The Manchester Corporation should demand that the Joint Committee be elected directly by the ratepayers of the watershed over which it has jurisdiction. It is obvious that if the members of the Joint Committee were elected by popular vote they would only hold that authority as long as they did not abuse it. It is monstrous that the Lancashire County Council should have the power of nominating persons who have no connection with the trade of South Lancashire to dictate terms to the Corporation of Manchester, Salford, and Bolton, and to sit in judgment upon the manufacturers. Our manufacturers who turn out effluents have to adopt expensive methods of filtration and precipitation, while the competitors in other parts of the county, where there is no joint committee to apply the Act, go scot-free. Let the Manchester Corporation boldly attack the River Pollution Act. The Act should be entirely amended. It should be equally enforced all over England, Scotland, and Ireland, and its provisions should combine economy with efficiency, and not, as at present, sanction wholesale expenditure. Let the Manchester Corporation awaken to its responsibility, and it will surely have the support of the citizens. Manchester overthrew the Corn Laws. The Mersey and Irwell Joint Committee is an enemy much less powerful.—Yours, &c.,

PROGRESS.

MEMORIAL BUST OF FARADAY.

ON Monday afternoon the ceremony of unveiling a bust of Michael Faraday took place at the Michael Faraday Board School, Faraday-street, Waltham. The bust, which is of white marble, was presented to the school by the managers of the Royal Institution of Great Britain, and is a copy of the original bust executed by Matthew Noble. It stands upon a pedestal of Aberdeen granite 4ft. in height, and has been placed in the boys' hall of the school. On the wall immediately behind the bust a large brass tablet has been affixed, bearing the following inscription:—"Michael Faraday, natural philosopher, D.C.L., F.R.S., born at Newington, Surrey, September 22nd, 1791. He was a patient student, an eloquent expounder, and a brilliant illustrator of the laws of nature. Fullerian Professor of Chemistry in the Royal Institution of Great Britain, 1833 to 1867. Faraday's noblest monument is his 'Experimental researches in Electricity and Magnetism' from 1831 to 1851. He died at Hampton Court-green August 25, 1867, and was interred in Highgate Cemetery." The meeting on Monday, which was crowded with the boys and girls of the upper standards and with a large number of parents and visitors, was presided over by General Moberly, the vice-chairman of the London School Board. The Royal Institution was represented by Sir James Crichton Browne, F.R.S., Dr. Donald Hood, Mr. Basil Woodd Smith, and Mr. Young, assistant-secretary to the institution. General Moberly, in opening the proceedings, stated that the presentation of the bust was due to the Rev. A. W. Jephson, the member in charge of the school, who had suggested that the Royal Institution should be applied to to present some object to the school which should be a lasting memento of the great man who had been born in the locality. Faraday had had no such educational advantages as were now enjoyed, but had nevertheless succeeded in rising to the highest ranks. Sir J. Crichton Browne unveiled the bust, and expressed his pleasure at being permitted to unveil this statue of a great man who had spent a long life in unveiling the hidden mysteries of nature. He hoped the sight of that bust would be an inspiration to the children, and that they would learn who Faraday was and what he did. He suggested that one day every year should be set apart in the school in memory of Faraday, when some part of his work should be explained. The subsequent speakers included the Rev. A. W. Jephson, Mr. MacNamara, and the Rev. W. J. Horsely, Mr. G. C. Whitely, Mr. Dawes, and Mr. M. Jackman, the last named as head master of the school promising that a day should be set apart as suggested by Sir J. C. Browne.

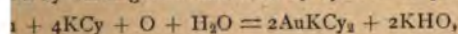
PERSONAL.—We are pleased to hear of peace and good feeling somewhere. It seems to exist between Messrs. Follows and Bate, Ltd., and their employees, for the latter recently presented Mr. F. W. Follows, a managing director of the company, with a handsome mounted claret jug and a silver salver, inscribed with a suitable reference to the cause of the presentation, namely, the marriage of Mr. Follows.

ACTION OF CYANIDES ON GOLD.

"SELECTIVE ACTION."

was read before the Institution of Mining and Metallurgy, Geological Museum, Jermyn-street, S.W., on Wednesday, W. A. Dixon, who pointed out that for some years past there has been considerable discussion as to a "selective action" existing between very much diluted solutions of cyanide of potassium for which it passes into the liquid as aurocyanide of potassium, and the base metals are left behind in the ore mass during treatment process. This is held to be the reverse of what occurs in a concentrated solution of cyanide is employed, as in that case the proportion of base metal in comparison to the gold is small. The following considerations will show how this is not the case, but that there is really no such thing as "selective action." The action seems to be generally understood that in the case of the action is the reverse of what it is in a strong one, and that on the part of the cyanide being implied in the state-

on by which gold is dissolved by cyanide of potassium is



being supplied by that present in solution in the water, or by agents, as chlorine, bromine, ferricyanides, peroxides, &c. The first is the usual source.

For the purpose of powder requires from 100 to 110 gallons of water to wet it, or, say, an average of 105 gallons, which at 70,000 grains is equal to 7,350,000 grains. The coefficient of solubility of oxygen at 30 in. barometric pressure and 60° F. is 0.0295, and by 5 to reduce it to that due to the partial pressure of oxygen as the coefficient of absorption of oxygen from air 0.0059, so 105 gallons of water would contain 43.383 grain measures of oxygen, which would weigh 62 grains. These 62 grains of oxygen are contained in 105 gallons, as a maximum, would, in conjunction with potassium, dissolve 1,527 grains of gold, that is, 3 oz. 12 gr., and the quantity of cyanide required would be 1,001 grains, that the solution would be very dilute, containing only 1 part of cyanide to 1,001 parts of water.

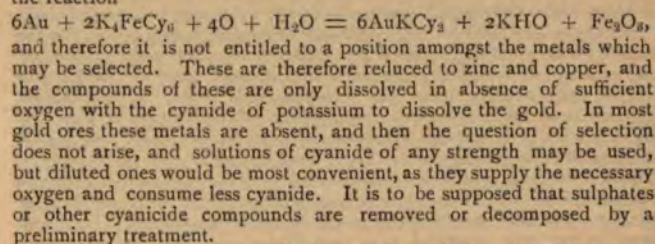
It is clear that we have here a sufficient explanation of the "selective action." Gold in presence of oxygen has in all cases a greater affinity for soluble cyanides, or the soluble cyanides have for the soluble cyanides have for the compounds of the base metals. These compounds have the same affinity for cyanogen whether in the free state or easily available is present or not, whilst if the action on gold is *nil*. The base metals always pass into solution until either they are exhausted or the solution is saturated, whichever happens first, a sufficient time to complete the reaction. A much diluted solution of cyanide contains much free oxygen in proportion to the cyanide, and dissolves much gold in proportion to the cyanide present, and little base metal, because there is little cyanide left to react with it; it therefore appears that the cyanide has selected the gold in the solution containing more cyanide, gold is dissolved till the cyanide is exhausted, and then the excess of cyanide enters into double action with the compounds of the base metals, which are then precipitated in greater proportion relatively to the gold, and the result appears to have had a selective action on them.

Base metals in the free state, as zinc, for example, have a superior affinity for cyanogen to gold, but these do not occur free in ores, but in ores containing gold as cyanide is brought in contact with it, as zinc, it dissolves, and the gold is precipitated. Zinc is commonly used for this purpose, is moreover known to precipitate the more efficiently the more free it is from compounds such

as in the case of cal work the oxygen in solution in the water used would be less than that indicated, as it would be removed by organic and inorganic substances undergoing oxidation, but, on the other hand, the action created by the cyanide process have usually much less gold per ton, or they are treated several times with fresh solutions, and re-treatment is simply a renewal of the conditions favourable to the solution of gold, an oxygen-holding solution of cyanide which is exhausted of that element.

In the current literature on this subject two distinct sets of reactions are mixed up, and are spoken of as one, the substances which are being called "cyanicides." This word should be confined to those substances which by their action on cyanides decompose them, as hydrocyanic acid, which soon decomposes. These substances do not combine with cyanogen or alkaline cyanides; they kill the cyanide, so that to such, the word cyanicide is truly applicable. On the other hand, "cyanicide" is not applicable to substances which by

entering into combination with cyanogen or cyanides may be rather regarded as causing sleep rather than death, and it is only on these that the so-called "selective action" can be exercised, and the compounds of only three of these are found in gold ores, namely, iron, copper, and zinc. Iron present in the ferric state may be inert or act as a cyanide if present as a salt, *i.e.*, as ferric sulphate; in the ferrous state it combines with cyanide of potassium to form ferrocyanide of potassium, but this also dissolves gold if sufficient oxygen is present, by the reaction



In practice it must necessarily happen that solutions containing more than the theoretical quantity of cyanide to the quantity of oxygen present must be used, even when cyanides are absent, in consequence of the gold being distributed in granules throughout an immense mass of ore. A granule of gold exhausts the cyanide and oxygen in its immediate neighbourhood, and action then ceases until a fresh supply of both arrives by diffusion from the surrounding solution. Mr. Dixon did not know that the relative rate of diffusion of oxygen and cyanide in watery solution had been determined, but it must be that 16 of oxygen will diffuse sooner than 260 parts of cyanide of potassium, and therefore an excess of cyanide must be used to compensate for this difference.

DETERMINATION OF LIME IN CALCINED MAGNESITE.

WHILST the separation of a small amount of magnesia from a large amount of lime presents no particular difficulty, the reverse operation is not so simple a matter. The following process is recommended as giving satisfactory results, the separation being complete without the need of having to resort to a second precipitation:—One gramme of magnesite is taken and the silica separated in the usual way. The iron is then removed by double precipitation, the filtrate slightly acidified with hydrochloric acid, and the solution made up to 500 cc. To 250 cc. of the solution are added 3 grammes of pure ammonium chloride and ammonia to alkaline reaction; 250 cc. of water are then added, and the lime precipitated in the solution, while boiling, by 2 grammes of ammonium oxalate dissolved in 100 cc. of water. When precipitated in this way, the lime is found to be quite free from both magnesium hydrate and magnesium ammonium oxalate.—*The Analyst*.

EXPORTS OF PETROLEUM FROM U.S.A.

THE Chief of the Bureau of Statistics, Washington, gives the following returns of the exports of petroleum and petroleum products for September. The total shipments were 87,413,316 gallons, compared with 80,942,500 in 1896. The total for the nine months ending September, 1897, was 739,986,421 gallons, against 681,882,251 gallons during the same period in 1896. The details of the shipments are as follows:—

	CRUDE PETROLEUM.	Gallons.
Total, Sept., 1897		7,878,570
" " 1896		10,632,003
NAPHTHAS.		
Total, Sept., 1897		2,474,757
" " 1896		1,690,502
ILLUMINATING.		
Total, Sept., 1897		70,961,828
" " 1896		64,637,802
LUBRICATING AND PARAFFIN.		
Total, Sept., 1897		4,896,709
" " 1896		3,977,321
RESIDUUM.		
Total, Sept., 1897		1,201,452
" " 1896		4,872

SOCIETY OF CHEMICAL INDUSTRY.—*Liverpool Section*.—The next meeting of the Section will be held in the Chemical Laboratories, University College, on Wednesday, November 24th, 1897, at 7 p.m., when the following papers will be read:—1. Illustrations of some of Professor Osborne Reynolds' Experiments on Vortices, by Professor Campbell Brown. 2. "The Magnetic Separation of so-called Non-Magnetic Material," by Mr. John H. Darby.

Correspondence.

** We do not hold ourselves responsible for the opinions expressed by our correspondents.*

COMMERCIAL ELECTROLYSIS.

(To the Editor of the Chemical Trade Journal.)

Sir,—I find the following remarks in the chairman's address to the Manchester section of the Society of Chemical Industry:—"As the master patents have all lapsed by effluxion of time, only minor improvements can well be protected." I trust your sense of justice will permit me to reply that the above remark is not by any means applicable to the Hargreaves-Bird patents. The system of exposing the cathode to a gaseous boundary was never proposed, even as a laboratory experiment previous to its being published by the inventors. To the "orthodox" electro-chemists the very idea seemed absurd, and the production of a commercially pure product by the use of diaphragms has been repeatedly and emphatically declared impossible. The invention has not only produced new technical results, but has served to show the "orthodox" electro-chemists that they must reconsider the foundations of their hypothesis of ionic migration.

In reply to the question why the process has not been introduced to the public for manufacturing purposes before now, I may say that (1st) a process so essentially different from anything before proposed required careful investigation; and (2nd) that the syndicate holding the patents have, from the first, decided not to offer anything to the public until they had thoroughly tested it under all the conditions required in large manufacturing operations. This has required more expenditure and patient waiting, but will in the end be more profitable to all concerned than erecting a works and then having to alter all the plant again, to introduce small but essential details which are often left out of consideration in the laboratory and small working scale experiments.—I am, &c.,

JAMES HARGREAVES.

Farnworth, Widnes, 17th Nov., 1897.

MANCHESTER SEWAGE SCHEME. NEW RIVERS COMMITTEE.

A PRIVATE meeting of the Manchester City Council was held on Wednesday at the Town Hall, under the presidency of the Lord Mayor (Mr. Alderman Gibson), to consider the best means of selecting a new Rivers Committee, the old Committee having resigned in a body when the ratepayers pronounced against their scheme for sending the effluent from the sewage works through a culvert to the tidal waters of the Mersey. About two-thirds of the members of the Council attended the meeting, which was held in the Lord Mayor's Parlour, directly after the business of General Purposes Committee had been disposed of. There was, we learn, considerable discussion as to the precise meaning of the vote which the ratepayers gave—whether it signified thorough disapproval of the culvert scheme, a desire for more evidence of its necessity, or a belief that a cheaper and equally effective way of disposing of the sewage effluent might be found. Some members of the old Committee expressed the opinion that the recent poll resulted adversely to the Corporation because the ratepayers did not understand the real issue; that, in short, they were alarmed at the suggested expenditure, and voted blindly against it. Mr. Alderman Thompson and Mr. Alderman M'Dougall, who held the offices of chairman and deputy-chairman of the old Committee, and some other of their colleagues, intimated their wish not to be re-elected. Eventually it was agreed that the Committee should consist of seven aldermen and 14 councillors, as before, and that the members should be chosen by ballot. The result of the voting was as follows:—Aldermen Higginbottom, Sir Bosdin T. Leech, M'Dougall, Reade, Southern, Smith, and Thompson; Councillors Ashton, N. Bradley, Brocklehurst, Dreyfus, Grimsbaw, Lambert, Maben, Milnes, O'Doherty, Saxon, Shann, Sutton, Trevor, and Whyman. The Committee has now only to be formally brought before the Council for acceptance.

THE COMMITTEE ON DANGEROUS TRADES.

THE Committee appointed in 1895 by the Home Office to inquire into the conditions of work as they affect the health and safety of the operatives in certain trades, is visiting Sheffield. The special questions that they will consider in that district will be: (1) The use of "converters" in Bessemer steel works, with a view to reporting as to the desirability of having automatic locking arrangements for the converters, which would keep them in their place in the event of fracture or other defect in the hydraulic pressure pipes. (2) The manufacture and use of grindstones; it being desirable to ascertain whether at the quarry, by testing, in transit, storage, hanging, or in use, anything can

be done to lessen the number of fatal and serious accidents caused by the breakage of grindstones. (3) File cutting.—To decide whether any practicable suggestions can be made which would lessen the very large number of cases of lead poisoning so prevalent amongst those engaged in this occupation. (See also p. 326.)

The list of trades and operations which the Committee were instructed to deal with included the following:—India-rubber works, paper-staining, colouring, enamelling, dry cleaning, basic slag works, and manufacture of silicate cotton, electric generating works, sole-stitching by American machinery, glass polishing, file cutting, bronzing and metallachrome powder in lithographic works, flour mills, use of converters in metal works, use of steam locomotives in factories, licking of labels for reels in thread mills, use of inflammable paints in shipbuilding yards, galvanised iron works, the process of dyeing with arseniate of soda, the manufacture and use of grindstones and emery wheels, the use of lead in various forms in print and dye works, the testing of bottles by compressed air, the bottling of aerated waters, the manufacture of salt, ending and mending in velvet works. Interim reports have been presented dealing with india-rubber works, paper-staining, colouring, and enamelling, dry cleaning, bronzing, the use of steam locomotives in factories, the use of inflammable paints in shipbuilding yards, the bottling of aerated waters, and electrical generating works.

Market Reports.

TAR AND AMMONIA PRODUCTS.

There is really nothing fresh to report in tar products. Benzols, if anything, are a trifle weaker at 1s. 10d. to 1s. 11d. for 90's, and 2s. to 2s. 1d. for 50/90's. Carbolic acids are steady, but prices remain practically nominal. There is no change in naphthas. Anthracene is looking up at 5½d. to 5¾d. for 30% A, and 4d. to 4½d. for 30% B. Pitch is weak at 20s. 6d. f.o.b. East Coast.

Sulphate of ammonia continues to advance, and so far without materially checking business. That the swing of the pendulum has turned is now distinctly manifest. The forward market is receiving more attention, Beckton quotation for next year now being £9. 2s. 6d. At Leith makers are asking much the same price. Closing prompt values are:—Beckton, £8. 17s. 6d.; London outside makes, £8. 17s. 6d.; Liverpool, £8. 17s. 6d. to £9; Hull, £8. 17s. 6d.; and Leith, £8. 17s. 6d. to £9. Nitrate firmer.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali market trade is fairly brisk. Prices do not show any tendency to improve, but a fair bulk of business is being done both for home and export. Alkali, 58%, remains firm at £3. 17s. 6d. bags, f.o.r. Caustic soda for spot delivery is nominally unchanged, and the market on the whole is easier. Lower prices are taken for forward contracts. Current quotations, f.o.b. Liverpool, are:—77%, £8. 10s.; 74%, £8. 2s. 6d.; 70%, £7. 7s. 6d.; 60%, £6. 7s. 6d., nett, per ton, 10-ton lots. Soda crystals unaltered. In bleaching powder the price for home trade orders is £5. 2s. 6d. to £5. 5s. per ton for forward contracts, but there is indication that the new company which started the war of prices has had enough of it, and some recovery may be looked for. For export the price is £6. 5s. to £6. 10s. f.o.b. Liverpool. Chlorates are depressed at 3¼d. for potash and 4½d. soda; lower prices are quoted for forward contracts. Caustic and carbonate of potash rather easier for forward delivery. Sulphate of copper still weak, and current quotations are f.o.b. £16. to £16. 5s. per ton. For white powdered arsenic the market is steady at £21. 15s. Garston, London, etc. Aniline oil and salt meantime unchanged. Glycerine continues to show a downward movement in value. Brown acetate of lime dealer at £5. 12s. 6d., c.i.f. Other acetates and acetic acid without alteration. Sulphocyanides quiet. Yellow prussiate of potash firm at 6¼d. per lb.; cyanide, 98/100%, 1s. 1d. per lb. Nitrate of soda steady at 7s. 6d. to 7s. 7½d. per cwt.

REPORT ON MANURE MATERIAL.

The market generally continues active, both for nitrogenous and phosphatic materials.

Quotation for 75/80% Florida phosphate rock remains at 6d. per unit, c.i.f. to good United Kingdom ports, a higher price being asked for North sea ports, in large lines. Quotations for South Carolina River rock and for similar grade Algerian are steady, and inclined to harden.

Bone material is in good request in face of limited supplies, and values have advanced all round. For East India bone meal, £4. 10s. 4d. 2s. 6d. per ton is now asked, and buyers are responding better to the advance. £4. is required for crushed Kurrachees on spot, and £4. 2s. 6d. for shipment. River Plate grinding bones are in good

t, and are now able to fetch £3. 15s. per ton. The value of common grinding bones may be quoted as £3. 10s. to £3. 12s. 6d. of soda is in better request at 7s. 6d. per cwt. for good up to 1d. for fine quality. In the forward position, interest has revived, market closing firm.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

L.S.—Palm oil is firm, there being but a small amount offering, are rather restricted. Olive is in fairly good request, and keeps in spite of the demand being checked somewhat by prices. It stands at 16s. to 16s. 6d. cwt. for Liverpool makes in export the market being firm thereat. Cottonseed is quiet, Liverpool standing at 15s. to 16s. cwt. Castor is on the upward grade the market being firm with good seconds Calcutta steadily held 1d. to 3½d. First pressure French 3½d. lb., with fairly well thereat. Tallow is firm and unchanged in value. Resin meets fair spot inquiry at current prices, which are still on the same level. Spirits of turpentine firm at 24s. 3d. cwt. Petroleum American 5½d. to 7d., and Russian refined 5d. per gallon, fine to quality.

KES.—Linseed continues firm, with a good demand for American at £6. 15s. to £6. 17s. 6d., and a fair amount of business doing Liverpool makes at £7. 12s. 6d. to £8. 5s. per ton, according to. The market for American decorticated cottonseed remains steady, with a moderate business passing. Sellers still ask 10s. to £6. 2s. 6d., but Liverpool makes meet a fair continued at £6. 5s. to £6. 15s. per ton. Undecorticated Liverpool have recovered the slight decline reported last week, and a good demand is experienced at £4. to £4. 2s. 6d., according to. Holders of Egyptian remain firm at £4. 2s. 6d. per ton, with inquiry going on thereat.

FULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

L.S.—Business in oil trade here leaves a good deal to be desired, though values are low the demand encourages no speculation. Only linseed oil has improved in value about 5s. per ton on the but next week may record a fall of 10s. Refined cotton oil can be bought very cheaply, and closes about the same value of a week ago, a very dull market; for filtered qualities the demand is fairly

Castor oil extracted in the city finds an encouraging market. Refined oil quoted firm at 14s. 3d. per cwt., spot naked; Nov.-Dec., 1½d., and January-April, 14s. 10½d. paid. Boiled and refined, 1½d. 10s. per ton extra. Refined cotton oil finds a very slow both for spot and all forward positions: 12s. 7½d. to 12s. 9d. per spot naked; December-April, 12s. 10½d. sellers. Filtered oil 1½d. 10s. per ton extra; crude oil is quoted 11s. 6d. per cwt., naked casks 1½d. and ordinary barrels 1½d. 10s. per ton extra. Olive oil meets with a fair demand, but prices practically unchanged. Turpentine in fair demand at 24s. Olive oil soap (Italian), £15. 10s. per cwt. c.i.f. Hull. Cod oils, £16. to £18. per ton. Oleines remain at the advance. Castor oil firm, from 3½d. per lb. Danish has advanced 3s. 6d. per cwt. for arrival; Danish and Swedish 114s. to 118s.; Dutch, 106s. to 112s.; Canadian, 92s. to per cwt.

KES.—Feeding stuffs are finding a more ready market, consequently values remain very firm. Linseed cakes, 95%, very firm, 7s. 6d. to £8. Oilcakes (linseed), £6. 17s. 6d.; Americans, per delivery, £7.; Russians, £7. 7s. 6d. to £7. 12s. 6d. Cakes steady: best makes, £4. 5s.; seconds, £4. 2s. 6d. Cakes, Black Sea, £4. 12s. 6d. per ton.

INTS.—The trade is excessively dull, some firms having gone short time who have never experienced such before. Prices unchanged.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Bichromate of potash and bichromate of soda, under the combination of makers (not more than three works altogether, which includes hole), have for fully five years been kept up at 4½d. for the one 3½d. for the other (a farthing less for export), but at last there is hope. Makers intimate a reduction of a halfpenny. Consumers are looking rather for a rise over the past two or three years, but evening circumstances have acted in the other direction. Foreign offers have been offered here with a discount as an inducement. The of England chemical works is said to be resuming the making of bichromates. It is also said that there has been dissension amongst the West of Scotland makers themselves. All these have influenced for a fall in the price of ammonia, continuing the rise, last week touched £8. 17s. 6d. prompt (a special lot), and £9. was paid for January to June delivery. The article is in reduced stocks, and strong. No other prices in the market.

Chief prices current are:—Soda crystals, £2. 10s. to £2. 17s. 6d. nett, Tyne, soda ash, 48/62°, £4. 2s. 6d. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £4. 17s. 6d. to £5. 7s. 6d. nett, Glasgow; caustic soda, white, 74° £8. 2s. 6d., 70/72° £7. 7s. 6d., 60/62° £6. 7s. 6d., cream 60/62° £6. 2s. 6d. all nett, Liverpool; bleaching powder, 35/37°, £6. 5s. nett, Tyne; saltcake, 19s.; borax, English, refined, £15., and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4d. nett, for Scotch and English deliveries (for export, 3¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3d. nett, f.o.b. Glasgow); chlorate of potash, 3¼d. less 5%, any port; nitrate of soda, 7s. 6d. to 7s. 9d.; sulphate of ammonia, £8. 16s. 3d. to £8. 17s. 6d. prompt, f.o.b. Leith; sal ammoniac, first and second white, £33. and £31. nett any port; sulphate of copper, £16. 5s. less 5% Liverpool; paraffin scale, hard, 1½d. to 1½d. per lb., soft, 1½d. per lb.; paraffin wax, 120° semi-refined, 1¼d. to 2d. per lb.; paraffin spirit (naphtha), 6½d. to 7d. per gallon; paraffin oil (burning), No. 1, 5½d., and crystal, 6d., at Glasgow and other big centres, for Scotch buyers (English sales a shade lower); ditto (lubricating) 86½° £4. 15s. to £5. 5s., 88½° £5. 15s. to £6. 5s., and 89/89½° £6. 10s. to £7. Week's imports of sugar at Greenock were 30,700 bags beet unrefined.

TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals continue quiet and without alteration in prices. Shipments show signs of falling off with approach of winter. Soda crystals are quoted £2. 12s. 6d. and £2. 15s. per ton, gross weight, locally. Caustic 70%, £7. 10s. and 76/77% £9.; per ton. Sulphur scarce at £5. per ton, f.o.b. Tyne.

Bleaching powder, softs, £6. 10s. per ton, nett; hards, £6. 15s. per ton, nett; caustic soda, 76/77% £9. and 70% £7. 10s., per ton; recovered sulphur, 2 cwt. bags, £5. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. 6d. per ton, nett; do., 52%, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; 90/95% crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham Salt is firm at 9s. per ton, f.o.b. Tees. Shipments are heavy.

COALS.—The market is rather firmer and there is a good demand for small steam and bunker coals. Gas coals are also improving in demand. Coke in strong demand for home consumption and also for export. Best Northumbrian steam, 8s. 6d. to 8s. 9d. per ton; second qualities, 7s. 6d. to 7s. 9d. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; gas coals 7s. 9d. to 8s. 3d. per ton; bunker coals, 7s. 9d. to 8s. per ton; coke, 19s. to 21s. per ton.

New Companies.

Innox Tannery Co., Ltd.—CAPITAL £200,000. in £1. shares. This company has been formed to adopt an agreement with a company of the same name and its liquidator, and to carry on the business of tanners, hide, skin, and leather merchants, manufacturers, exporters and importers, etc. The subscribers to the memorandum of association are:—S. Scoltock, Geraldine, Woodford, accountant; A. Raymond, 9, Tokenhouse Yard, E.C., gentleman; W. Hall, 7, Angel Court, E.C., stockbroker; R. G. Wells, 48, Grafton-street, W., accountant; C. Smith, Wellington-road, Battersea, gentleman; A. Thomson, 7, Anhalt-road, Battersea, clerk; E. S. Clegg, 97, Drayton Gardens, S.W., gentleman.

King, Walshaw & Co., Ltd.—CAPITAL £10,000. in £1. shares. This company has been formed to acquire the business carried on by W. King and R. C. Walshaw, at Huddersfield, and to carry on the business of chemists, druggists, oil and colour merchants, and dyers. The subscribers to the memorandum of association are:—W. King, 4, Market Place, Huddersfield, chemist; R. C. Walshaw, 29, John William-street, Huddersfield, chemist; Mrs. E. Walshaw, West Lynn, Gledholt, Huddersfield; J. E. Longbottom, Castle Fields, Rastrick, Brighouse, manager; Mrs. I. E. Longbottom, Castle Fields, Rastrick, Brighouse; A. Walker, 61, New North-road, Huddersfield, dyer; Mrs. L. M. Walker, 61, New North-road, Huddersfield.

IMPORTS OF CHEMICAL PRODUCTS

AT
THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending November 6th.

Acetic Acid—		
Holland, 160 pks.	R. W. Greeff & Co.	
" 44	Little & Johnston	
Acetone—		
France, 23 cks.	R. D. Lyon	
Alkali—		
Germany, 50 c.	J. Barber & Co.	
Ammonia Salt—		
France, 16 cks.	Typke & King	
Antimony Ore—		
Singapore, 15 t.	R. & J. Henderson	
Portugal, 8	James & Bamber	
Asbestos—		
Italy, £600	J. Coppo & Co.	
Germany, 135	Craven & Co.	
Canada, 120	W. Byford	
Italy, 20	T. Boom	
Barytes—		
Belgium, 30 brls.	Leach & Co.	
Holland, 88 cks.	Taylor Bros.	
" 159	W. Harrison & Co.	
Belgium, 36	O Hara, Matthews & Co.	
" 44	Wilkinson, Heywood & Co.	
Holland, 57		
Bromine—		
Germany, 40 cs.	A. & M. Zimmermann	
Borate of Lime—		
France, 320 bgs.	W. E. Cole	
" 320	J. Greig	
Camphor—		
Germany, 200 cs.	R. Warner & Co.	
" 250	S. Figgis & Co.	
Caoutchouc—		
Natal, 1 c.	L. & I. D. Jt. Co.	
U. States, 35	Prop. Bull. Wf.	
France, 10	H. Johnson & Sons	
Zanzibar, 68	S. Figgis & Co.	
" 191	L. & I. D. Jt. Co.	
Madagascar 43	Wainwright, B. & Co.	
" 9	Kleinwort, Sons & Co.	
Singapore, 96	Huttenbach & Co.	
" 64	Anderson, Weber & Smith	
Ceylon, 11	J. A. Hadden & Co.	
Carbolic Acid—		
Germany, 10 pks.	J. G. Back	
Castor Oil—		
Italy, 30 cs.	Beresford & Co.	
France, 12	Perkins & Homer	
E. Indies, 80	J. T. Morton	
Belgium, 53	May, Roberts & Co.	
Italy, 10		
Chemicals (otherwise undescribed)		
Germany, £135	L. & I. D. Jt. Co.	
France, 112	Mory & Co.	
" 5	Mess Parisiennes	
" 14	J. Forsey	
Holland, 15	H. Lorenz	
Belgium, 25	Hughes, Chemery & Co.	
Germany, 238	T. H. Lee	
" 153	Phillipps & Graves	
" 19	Craven & Co.	
Holland, 7	Herna, Peron & Co.	
Belgium, 96	Phillipps & Graves	
Germany, 144	T. Palmer	
" 713	A. & M. Zimmermann	
" 50	Elkan & Co.	
Holland, 24	Little & Johnston	
Germany, 9	J. Barber & Co.	
Holland, 38	Typke & King	
Germany, 22	City Coml. Wf.	
Cream of Tartar—		
France, 10 cks.	B. & F. Wf. Co.	
Italy, 3		
Spain, 10	F. C. Devon & Co.	
" 5	M. Ashby, Ltd.	
France, 5	T. Trapp & Sons	
" 5	J. W. Cook & Co.	
" 10	C. F. Gerhardt	
Dextrine—		
Germany, 400 bgs.	W. Balchin, Ltd.	
" 90	M. D. Co.	

Dyestuffs—

Aniline		
Holland, 1 ck.	Pickford & Co.	
Belgium, 13 pks.	W. Gerson & Co.	
Argols		
Italy, 517 bgs.	B. Jacob & Sons	
Cochineal		
Canaries, 5 bgs.	G. S. Bruce	
" 7	Swanston & Co.	
" 4	W. H. Cole & Co.	
" 16	Sperling & Williams	
" 25	Hendrey & Martin	
" 9	Burrell & Co.	
" 70	W. Dutton & Co.	
" 17	W. Kingsford & Son	
Cutch		
Singapore, 400 bxs.	J. Swire & Sons	
Rangoon, 500	A. Howden & Co.	
" 500	Hicks & Ashmore	
Extracts		
U. States, 200 bxs.	W. Burton & Sons	
France, 14 cks.	J. Harrison	
" 30	Beresford & Co.	
Denmark, 2	Sorensen & Co.	
France, 90	B. & F. Wf. Co.	
B. W. I., 25	Sollas & Sons	
U. States, 100	W. & S. Bowditch	
Canada, 120 cks.	Boutcher, Mortimore & Co.	
" 150 brls.	Furness, Withy & Co.	
U. States, 5	Dundee, Perth, & L. S. Co.	
Fustic		
B. W. I., 20 t.	S. Dobree & Sons	
Gambier		
Singapore, 532 bls.	Hendry & Martin	
" 681 pks.	J. W. Cook & Co.	
" 266 bls.	L. & I. D. Jt. Co.	
" 367	Brown & Elmslie	
" 619 bgs.	Beresford & Co.	
" 257	Prop. Hay's Wf.	
" 266 bls.	Hicks & Ashmore	
" 465	Brinkmann & Co.	
Myrabolams		
E. Indies, 2,000 pkts.	P. & O. Co.	
Saffron		
Spain, 1 cs.	G. Brumlen & Co.	
Tar Dyes		
Holland, 142 pks.	M. Benschel	
Tanners' Bark		
Belgium, 16 t.	Leach & Co.	
Valonia		
A. Turkey, 130 t.	Boutcher, Mortimore & Co.	
" 33	A. & W. Nesbitt	
" 62	Adam Bros.	
Farina—		
Holland, 120 bgs.	H. Lorenz	
" 400	R. Bennett & Co.	
" 100 bls.	R. G. Hall & Co.	
" 100 bgs.	G. R. Haller	
" 100	J. Knill & Co.	
Glucose—		
Canada, 1,545 pks.	M. D. Co.	
Germany, 73	656 Bennett S. S. Co.	
" 1,000	1,000 G. Clark & Son	
U. States, 500	500 Humphery & Co.	
" 350	2,108 Lon. & Til. Ltge. Co.	
" 3,530	3,500 Pearce, Pelly & Co.	
" 1,000	1,000 E. Thompson & Co.	
" 2,628	8,110 R. G. Hall	
Germany, 14	118 J. Knill & Co.	
France, 200	200 W. E. Cole	
U. States, 200	200 A. E. Piggott	
" 50	300 Page, Son & East	
" 50	312 R. Johnson & Co.	
" 50	284 Robinson, Son & Co.	
Germany, 35	301 M. D. Co.	
Holland, 50	50 J. Barber & Co.	
U. States, 500	500 L. & I. D. Jt. Co.	
" 500	500 Ohlenschlager Bros.	
" 500	500 C. Wright	
" 250	250 Trier, Meyer & Co.	
Germany, 1	6 Stein Bros.	

Glue—

U. States, £5	Armour & Co.	
Germany, 151	L. & I. D. Jt. Co.	
France, 42	Mory & Co.	
" 50	J. Harrison	
" 340	Bumett Bros. & Co.	
" 110	W. J. Davies & Sons	
Germany, 27	M. D. Co.	
" 22	Phillipps & Graves	
" 50	J. Knill & Co.	
France, 70	B. & F. Wf. Co.	
Belgium, 315	J. Barber & Co.	
Lamp Black—		
U. States, 80 hds.	J. Melvin	
Lead Acetate—		
Germany, 10 cks.	R. W. Greeff & Co.	
Litharge—		
Germany, 40 cks.	G. Smith & Son	
Manure—		
E. Indies, 110 t.	A. Hunter & Co.	
Germany, 30	F. W. Berk & Co., Ltd.	
Methyl Alcohol—		
Germany, 19 dms.	Lister & Biggs	
Holland, 17	R. D. Lyon	
Belgium, 18	Lister & Biggs	
France, 20 cks.	R. D. Lloyd	
Mica—		
E. Indies, £275	W. M. Smith & Sons	
" 205	E. Davis & Co.	
" 553	Dundee, Perth, & L. S. Co.	
Canada, 40	L. & I. D. Jt. Co.	
U. States, 50	Schenker & Co.	
Molasses—		
U. States, 5 pks.	14 c. Girard Bros.	
B. W. I., 5	60 R. G. Hall & Co.	
Nitre—		
Chili, 16,180 bgs.	W. Montgomery	
Ochre—		
France, 185 cks.	W. Harrison & Co.	
Holland, 13 pks.	Phillipps & Graves	
Phosphate Rock—		
Holland, 220 t.	West & Penrose	
Pitch—		
N. Russia, 500 brls.	Fellows, Morton, & Co.	
" 1,000	W. F. Malcolm & Co.	
Plumbago—		
Germany, 20 cks.	T. H. Lee	
U. States, 9	Lunham & Moore	
Ceylon, 85	Doulton & Co.	
" 104	Marshall & French	
" 440	J. Thredder, Son, & Co.	
Germany, 11	Brown & Elmslie	
Potash—		
Holland, 15 brls.	Phillipps & Graves	
Potassium Bicarbonate—		
Holland, 13 cks.	A. & M. Zimmermann	
Potassium Carbonate—		
France, 40 c.	J. A. Reid	
Germany, 100	Petri Bros.	
Potassium Chloride—		
Germany, 400 bgs.	Bessler, Waechter, & Co.	
Potassium Oxymuriate—		
Sweden, 100 kgs.	G. Boor & Co.	
Potassium Permanganate—		
Holland, 39 cks.	Carey & Sons	
" 210 kgs.	J. M. Steel & Co.	
Pumice Stone—		
Italy, 5 t.	Taylor Bros.	
Pyrites—		
Spain, 820 t.	Naylor, Benzon, & Co.	
Quicklyver—		
N. Russia, 216 bls.	L. & I. D. Jt. Co.	
Rosin Oil—		
France, 60 brls.	Barrett, Tagant, & Co.	
Saltpetre—		
Germany, 5 cks.	L. & I. D. Jt. Co.	
Soda—		
Holland, 208 c.	R. W. Greeff & Co.	
Sodium Acetate—		
France, 50 cks.	J. Harrison	
Starch—		
Belgium, 32 cs.	T. H. Lee	
" 40	Becker & Wagner	
Germany, 320	40 bgs. Seaward Bros.	
U. States, 120 brls.	C. Tennant, Sons, & Co.	

Holland, 80	Phillipps & Graves	
Belgium, 40	Leach & Co.	
" 200	C. Tennant, Sons, & Co.	
Belgium, 41	Taylor Bros.	
Holland, 929	Little & Johnston	
France, 8 brls.	Beck & Pollitzer	
Holland, 80	G. Rahn & Co.	
Belgium, 184	J. Harrison	
" 800	E. Olyett & Co.	
Germany, 4,290	Horne & Co.	
U. States, 15 brls.	Beck & Pollitzer	
Stearine—		
Holland, 16 bls.	J. Owen	
France, 120	H. Hill & Sons	
Belgium, 125	"	
Holland, 64	"	
Sulphur—		
Italy, 25 t.	Taylor Bros.	
" 50	P. Hecker & Co.	
Tar—		
France, 600 brls.	W. E. Cole	
Tar Salts—		
Holland, 33 cks.	J. Owen	
Tartaric Acid—		
Belgium, 3 pks.	F. C. Devon & Co.	
" 4	H. Lorenz	
Ultramarine—		
Belgium, 12 brls.	D. Storer & Sons	
Holland, 4 cks.	W. Harrison & Co.	
" 9 pks.	J. Barber & Co.	
Belgium, 10 cs.	W. Harrison & Co.	
Varnish—		
U. States, 73 pks.	Taylor Bros.	
France, 3	Mory & Co.	
Germany, 2	H. Lambert	
France, 4	W. Balchin	
Verdigris—		
France, 1 ck.	B. & F. Wf. Co.	
White Lead—		
Belgium, 17 cks.	J. L. Lyon & Co.	
Holland, 25	N. J. Fenner & Co.	
" 20	A. & M. Zimmermann	
Germany, 25 brls.	H. B. Alder & Co.	
" 40 cks.	D. Storer & Sons	
" 27	W. A. Rose & Co.	
Holland, 48	T. & W. Farmiloe, Ltd.	
Belgium, 96	"	
Wood Pulp—		
Sweden, 300 pks.	Tough & Henderson	
" 5,390	Henderson, Craig, & Co.	
Holland, 108	W. G. Taylor & Co.	
Sweden, 400	E. J. & W. Goldsmith	
Holland, 1,332	W. E. Bott & Co.	
Sweden, 800	Johnsen & Jorgensen	
Norway, 60	Tough & Henderson	
Canada, 448	Henderson, Craig, & Co.	
U. States, 642	C. S. Lovell	
Holland, 74	G. Rahn & Co.	
" 250	"	
Zinc Oxide—		
Holland, 150 brls.	M. Ashby, Ltd.	
Germany, 56 pks.	C. Tennant, Sons, & Co.	
Holland, 25	J. Matten	
U. States, 150 brls.	M. Ashby, Ltd.	

LIVERPOOL.

Week ending November 4th.

Alum Cake—		
Rotterdam, 95 cks.		
Aluminium—		
New York, 358 bxs.	T. Ashbury	
Asbestos—		
Genoa, 29 bls.		
Montreal, 200 bgs.		
New York, 84		
Barytes—		
Rotterdam, 11 cks.		
Bone Black—		
Philadelphia, 30 brls.		
Borate of Lime—		
Antofagasta, 1,310 bgs.		

Borates—		
Galveston,	1,876 sks.	Bahr, Behrend & Ross
"	1,476	
Borax—		
Galveston,	2,326 sks.	
Caoutchouc—		
Havre,	qty.	Cunard S. S. Co. Ld.
Valparaiso,	37 bls.	Kleinwort, Sons & Co.
Citric Acid—		
Messina,	8 cks.	
Colours—		
Antwerp,	1 ck.	
Rotterdam,	4 cks.	6 tubs.
Cream of Tartar—		
Bordeaux,	23 cks.	
Oporto,	3	
Dyestuffs—		
Cochineal		
Teneriffe,	6 bgs.	Canary Islands Trading Co.
Las Palmas,	14	Sperling & Williams
Extracts		
New York,	19 cks.	
Fustic		
Tampico,	1,568 sticks	N. Waterhouse & Sons
Gambler		
New York,	5 bls.	Bunkmann & Co.
Shumac		
Palermo,	1,625 bgs.	75 bls.
Valonia		
Smyrna,	126 t.	Barry Brs.
"	151	10 c.
Farina—		
Fiume,	300 bgs.	
Glucose—		
New York,	350 bls.	
Glue—		
New York,	350 bls.	T. M. Duche
Rotterdam,	2 cs.	102 bgs.
Guanos		
B. Ayres,	2,145 bgs.	
Gypsum—		
Cadiz,	1 cs.	Osborne & Scott
Iodine—		
Valparaiso,	56 bls.	
Lamp Black—		
Gothenburg,	25 bxs.	
Limestone—		
Antwerp,	1 crt.	J. T. Fletcher & Co.
Lithopone—		
Rotterdam,	20 cks.	
Mercuric Oxide—		
Hamburg,	4 cks.	
Molasses—		
Alexandria,	270 bls.	
Paint—		
Hamburg,	43 dms.	
Para,	2 bls.	
Boston,	1 kg.	Musson & Co.
Paraffin Scale—		
New York,	560 bls.	Thompson & Bedford
Philadelphia,	100	
Phosphate Rock—		
Norfolk, Va.,	1,525 t.	
Phosphates—		
Ghent,	qty.	
Pitch—		
Hamburg,	57 cks.	
Plumbago—		
Genoa,	102 bgs.	G. Huntriss & Co.
Potash—		
Rotterdam,	5 cks.	
Potassium Chlorate—		
Gothenburg,	85 kgs.	
Pyrites—		
Huelva,	3,929 t.	Matheson & Co.
Saltpetre—		
Hamburg,	4 cks.	90 kgs.
Soap—		
Barl,	197 cs.	
Smyrna,	50	
N. Orleans,	933 bls.	
Rotterdam,	15 cs.	
Boston,	330 bls.	W. T. Geddis
Starch—		
Boston,	10 bls.	
Antwerp,	638 cs.	J. T. Fletcher & Co.
"	227	
R " erdam,	148	

Stearine—		
Antwerp,	25 bgs.	J. T. Fletcher & Co.
Sulphur—		
Catania,	20 bbls.	80 bgs.
Tallow—		
B. Ayres,	600 hf. pps.	
Baltimore,	60 tcs.	
Tartaric Acid—		
Rotterdam,	20 cks.	
Treacle—		
Philadelphia,	850 bls.	
Ultramarine—		
Hamburg,	10 cs.	
Rotterdam,	3	
Varnish—		
New York,	14 bls.	W. A. Warren
Boston,	4	W. H. Staynes & Smith
White Lead—		
Antwerp,	27 cks.	J. T. Fletcher & Co.
Rotterdam,	109	
Wood Pulp—		
Skien,	4,350 bls.	H. Tyrer & Co.
Oporto,	200	
Boston,	319 rolls	
Gothenburg,	15 bls.	Spicer & Son
"	8	G. F. Green & Co.
Rotterdam,	102	
"	150 bbls.	
Zinc Oxide—		
New York,	100 bls.	
Antwerp,	11	

MANCHESTER.

Week ending November 6th.

Albumen—		
Hamburg,	4 cks.	
Alizarine—		
Rotterdam,	343 cks.	4 bxs.
Ammonium Acetate—		
Rotterdam,	3 bls.	
Ammonium Sulphide—		
Bordeaux,	17 cks.	J. & P. Hutchison
Aniline Colours—		
Rotterdam,	7 bxs.	
Antimony Salts—		
Rotterdam,	4 cks.	
Barytes—		
Antwerp,	301 bgs.	
Hamburg,	5 cks.	
Boracic Acid—		
Hamburg,	10 cks.	
Chemicals (otherwise undescribed)		
Rotterdam,	15 cks.	1 cs.
Coal Products (otherwise undes.)—		
Hamburg,	8 cks.	
Colours—		
Antwerp,	9 pks.	J. T. Fletcher & Co.
"	16 cks.	
Ghent,	2 bls.	
Boulogne,	11 cks.	
Rotterdam,	153	32 cs.
Hamburg,	15	2 4 dms.
Copper Oxide—		
Ghent,	5 bls.	
Cream of Tartar—		
Rotterdam,	20 kgs.	
Farina—		
Rotterdam,	1,000 bgs.	
Hamburg,	500	
French Chalk—		
Boulogne,	4 cs.	
Gelatine—		
Hamburg,	2 cs.	
Glue—		
Treport,	32 bgs.	15 cs.
Antwerp,	4 cks.	15 bls.
Rotterdam,	9	
Indigo—		
Rotterdam,	14 chts.	9 cs.
Lead Acetate—		
Hamburg,	15 cks.	
Limestone—		
Antwerp,	1 crte.	4 cs.
Ghent,	2	
Logwood—		
Cape Haytien,	618 t.	
Madder—		
Rotterdam,	1 ck.	
Manure—		
Rotterdam,	1 ck.	

Manganese—		
Hamburg,	31 cks.	
Mineral White—		
Bordeaux,	100 bgs.	G. G. Blackwell, Sons, & Co.
Ochre—		
Treport,	39 bls.	
Potash—		
Treport,	4 cks.	20 dms.
Rotterdam,	20	
Potassium Chloride—		
Hamburg,	10 cks.	
Sodium Acetate—		
Treport,	23 cks.	
Starch—		
Antwerp,	600 cs.	
Rotterdam,	155	
Hamburg,	132	
Tannic Acid—		
Hamburg,	8 cks.	
Rotterdam,	2	
Tartar—		
Bordeaux,	6 cks.	J. & P. Hutchison
Hamburg,	10	
Tartaric Acid—		
Rotterdam,	8 cks.	
Tin Oxide—		
Rotterdam,	10 cks.	
Waste Salt—		
Hamburg,	500 bgs.	and qty.
White Lead—		
Antwerp,	5 cks.	
Rotterdam,	17	
Whiting—		
Gothenburg,	100 bgs.	
Wood Pulp—		
Gothenburg,	3,716 bls.	
Drammen,	2,000	H. Newall & Sons
"	1,250	W. Gallagher & Son
"	5 cs.	W. H. Ingram
Hamburg,	20 bls.	
Drontheim,	400 bls.	Stott, Coker, & Co.
Hornmeloikeer,	5,699	
Stenkeer,	3,125	"
Zinc Ashes—		
Antwerp,	15 bls.	8 cks.
Zinc Oxide—		
Antwerp,	117 cks.	
Rotterdam,	60 bls.	
Zinc White—		
Rotterdam,	5 cks.	

HULL.

Week ending November 6th.

Alkali—		
Bremen,	1 ck.	Veltmann & Co.
Ammonia—		
New York,	50 cyldrs.	Wilson, Sons, & Co., Ld.
Barytes—		
Bremen,	36 cks.	G. Holmes & Co.
"	22	Sissons Brs. & Co.
"	41	
Riga,	90	Wilson, Sons, & Co., Ld.
Amsterdam,	23	Hutchinson & Son
Antwerp,	233	Bailey & Leatham, Ld.
Chemicals (otherwise undescribed)		
Bremen,	1 cs.	Veltmann & Co.
Copenhagen,	1 ck.	Wilson, Sons, & Co., Ld.
Hamburg,	1	Bailey & Leatham, Ld.
Dunkirk,	81 pks.	Wilson, Sons, & Co., Ld.
Cod Oil—		
Drontheim,	3 bls.	Wilson, Sons, & Co., Ld.
Christiansund,	10	"
Aalesund,	45	"
Bergen,	158	"
Christiania,	26	"
Colours—		
Antwerp,	49 pks.	Wilson, Sons, & Co., Ld.
Rotterdam,	11 cks.	W. & C. L. Ringrose
"	67 pks.	Wilson, Sons, & Co., Ld.
Danzig,	10 cks.	
Dextrine—		
Harlingen,	10 bls.	Hutchinson & Son

Dyestuffs—		
Alizarine		
Rotterdam,	33 bls.	W. & C. L. Ringrose
Indigo		
Rotterdam,	4 bls.	W. & C. L. Ringrose
"	1 cht.	Hutchinson & Son
Madder		
Rotterdam,	1 ck.	Hutchinson & Son
Farina—		
Harlingen,	650 bls.	Hutchinson & Son
"	200	Wilson, Sons, & Co., Ld.
"	700 bgs.	W. & C. L. Ringrose
Glucose—		
New York,	848 bls.	
Glue—		
Dunkirk,	15 bls.	Wilson, Sons, & Co., Ld.
Christiania,	20 bgs.	"
Rouen,	10 pks.	Rawson & Robinson
"	10 bls.	
Lithopone (White)—		
Amsterdam,	5 cks.	Hutchinson & Son
Ochre—		
Rouen,	11 cks.	Rawson & Robinson
Phosphate—		
Antwerp,	50 bgs.	Wilson, Sons, & Co., Ld.
Pitch—		
Copenhagen,	51 bls.	Wilson, Sons, & Co., Ld.
Potash—		
Dunkirk,	38 dms.	Wilson, Sons, & Co., Ld.
Antwerp,	9 cks.	"
Potassium Cyanide—		
Hamburg,	10 cs.	Bailey & Leatham, Ld.
Saltpetre—		
Hamburg,	10 kgs.	Wilson, Sons, & Co., Ld.
Antwerp,	135	"
Soda—		
Antwerp,	115 bgs.	Bailey & Leatham, Ld.
"	100	Wilson, Sons, & Co., Ld.
Starch—		
Libau,	20 bgs.	
Rotterdam,	755 cs.	Reckitt & Sons
Ghent,	108	
Antwerp,	60	Bailey & Leatham, Ld.
Bremen,	962	Veltmann & Co.
Rotterdam,	40	Hutchinson & Son
Antwerp,	100	Wilson, Sons, & Co., Ld.
Amsterdam,	40	W. & C. L. Ringrose
Stearine—		
Antwerp,	63 bgs.	Bailey & Leatham, Ld.
"	63	Wilson, Sons, & Co., Ld.
Tallow—		
New York,	60 bls.	Wilson, Sons, & Co., Ld.
"	10	
Dunkirk,	115 cks.	"
Tar—		
Stockholm,	91 cks.	Wilson, Sons, & Co., Ld.
Danzig,	21 bls.	
Tartar—		
Bordeaux,	3 cks.	Rawson & Robinson
Tartaric Acid—		
Rotterdam,	2 cks.	W. & C. L. Ringrose
Treacle—		
New York,	200 bls.	Wilson, Sons, & Co., Ld.
Turpentine—		
Bordeaux,	5 bls.	Rawson & Robinson
Ultramarine—		
Rotterdam,	2 cks.	W. & C. L. Ringrose
Varnish—		
Antwerp,	5 cks.	T. F. Chambers & Co.
White Lead—		
Dunkirk,	17 cks.	
Rotterdam,	5	W. & C. L. Ringrose
Amsterdam,	41	Hutchinson & Son

Antwerp,	35	Bailey & Leatham, Ld.
Christiania,	20	Wilson, Sons, & Co., Ld.
Amsterdam,	25	W. & C. L. Ringrose
Wood Pulp —		
Drontheim,	1,040 bls.	Wilson, Sons, & Co., Ld.
Bergen,	300 pks.	
Konigsberg,	375 bls.	Bailey & Leatham, Ld.
Hamburg,	280 pks.	J. Good & Sons
Abo,	104 bls.	Wilson, Sons, & Co., Ld.
Antwerp,	1	
Zinc Ashes —		
Amsterdam,	24 cs.	Hutchinson & Son
Zinc Oxide —		
Antwerp,	2 cks.	Morley & Co.

GLASGOW.

Week ending November 11th.

Acetate of Manganese —		
Hamburg,	1 ck.	
Albumen —		
Hamburg,	5 cs.	
Stettin,	10	
Alumina Sulphate —		
Rotterdam,	100 bgs.	J. Rankine & Son
Barytes —		
Rotterdam,	33 cks.	J. Rankine & Son
Chemicals (otherwise undescribed)		
Rotterdam,	11 cs.	J. Rankine & Son
Citric Acid —		
Messina,	24 cks.	
Colours —		
Rotterdam,	4 cks.	J. Rankine & Son
	38 pks. 3 cs. 2 bas. 14 brls.	
Cottonseed Oil —		
Rotterdam,	15 brls.	J. Rankine & Son
Dextrine —		
Stettin,	100 bgs.	
Dyestuffs —		
Alizarine		
Rotterdam,	117 cks.	J. Rankine & Son
	1 cs. 27 brls.	
Aniline		
Rotterdam,	5 cks.	J. Rankine & Son
	8 cs.	
Aniline Colours		
Hamburg,	15 cks. 12 cs.	
Glue —		
Hamburg,	60 bgs.	
Rouen,	11 cks. 27 bls	
Guano —		
Tromso,	2,080 bgs.	
Gypsum —		
Rouen,	400 bgs.	

Lead Acetate —		
Hamburg,	40 cks.	
Litharge —		
Rotterdam,	29 cks.	J. Rankine & Son
Molasses —		
Philadelphia,	10 brls.	
Ochre —		
Rouen,	23 cks.	
Paint —		
Christiania,	20 kgs.	
Paraffin Scale —		
Philadelphia,	252 brls.	
Pitch —		
Rotterdam,	5 cks.	J. Rankine & Son
Potash —		
Hamburg,	37 cks.	
Rotterdam,	51	J. Rankine & Son
	Rouen,	9
Pumice Stone —		
Messina,	99 cks. 7 cs.	
Pyrites —		
Huelva,	1,740 t.	Tharsis Co.
Saltpetre —		
Hamburg,	140 kgs.	
Silicium —		
Hamburg,	8 bgs.	
Soap —		
Hamburg,	1 cs.	
Soda —		
Rotterdam,	24 cks.	J. Rankine & Son
Starch —		
Rotterdam,	106 cs.	J. Rankine & Son
Stearine —		
Rotterdam,	38 bls.	J. Rankine & Son
Amsterdam,	185 bgs.	J. Rankine & Son
Sulphur —		
Catania,	2,575 bgs. 115 cks. 110 brls	
Tartar —		
Bordeaux,	13 cks.	
Tartaric Acid —		
Messina,	20 cks.	
Treacle —		
Philadelphia,	1,000 brls.	Waddall & Bryson
	100	
Waste Salt —		
Hamburg,	265 cks.	
White Lead —		
Rotterdam,	58 cks. 20 pks.	J. Rankine & Son
Whiting —		
Bordeaux,	100 bgs.	
Wood Pulp —		
Christiania,	3,138 bls. 5 cs.	

Zinc White —		
Rotterdam,	10 pks.	J. Rankine & Son

TYNE.

Week ending November 6th.

Barium Chlorate —		
Rotterdam,	350 bgs.	Tyne S. S. Co.
Barytes —		
Rotterdam,	134 bgs. 45 cks.	Tyne S. S. Co.
Colours —		
Antwerp,	2 cks.	Tyne S. S. Co.
Farina —		
Hamburg,	50 bgs.	Tyne S. S. Co.
Glucose —		
New York,	50 trls.	Furness, Withy, & Co.
Glue —		
Hamburg,	40 bgs.	Tyne S. S. Co.
Limestone —		
Antwerp,	7 crts.	Tyne S. S. Co.
Paraffin Scale —		
New York,	100 brls.	C. Hassell
Pyrites —		
Orkedsaloren,	450	H. Hill & Son
Quicksilver —		
Copenhagen,	100 cyldrs.	
Soap —		
Hamburg,	qty.	Tyne S. S. Co.
Soda —		
Rotterdam,	6 bgs. 4 cs.	Tyne S. S. Co.
Sodium Nitrate —		
Antwerp,	30 bgs.	Tyne S. S. Co.
Stearine —		
Antwerp,	7 bgs.	Tyne S. S. Co.
Varnish —		
Antwerp,	2 brls.	Tyne S. S. Co.
White Lead —		
Antwerp,	12 cks.	Tyne S. S. Co.
Zinc White —		
Rotterdam,	25 cks.	Tyne S. S. Co.

GOOLE.

Week ending November 3rd.

Alizarine —		
Rotterdam,	133 cks.	
Alkali —		
Calais,	9 cks.	
Caoutchouc —		
Boulogne,	18 cks.	
Chemicals (otherwise undescribed)		
Hamburg,	5 cks. 6 cs.	
Colours —		
Hamburg,	25 cks. 15 cs.	

Dyestuffs (otherwise undescribed)		
Boulogne,	6 cks. 4 cs. 8 pks.	
Rotterdam,	451 101	
Farina —		
Delfsryhl,	550 bgs.	
Glucose —		
Hamburg,	20 cks.	
Glue —		
Hamburg,	12 bgs.	
Antwerp,	3 cks.	
Madder —		
Rotterdam,	2 cks.	
Potash —		
Calais,	30 drs.	
Saltpetre —		
Hamburg,	14 cks.	
Soda —		
Rotterdam,	14 cks.	
Sodium Silicate —		
Rotterdam,	2 cks.	
Starch —		
Potterdam,	10 cs.	
Ghent,	75	
Tartar —		
Antwerp,	10 cks.	
Ultramarine —		
Rotterdam,	1 ck.	
Varnish —		
Hamburg,	2 cks.	
Waste Salt —		
Hamburg,	100 t.	

GRIMSBY.

Week ending November 6th.

Albumen —		
Hamburg,	1 cs.	
Caoutchouc —		
Antwerp,	1 ble.	
Hamburg,	9 cs.	
Chemicals (otherwise undescribed)		
Antwerp,	1 cs.	
Hamburg,	3 pks.	
Colours —		
Dieppe,	2 cks.	
Antwerp,	7 40 cs. 15 pks.	
Hamburg,	20 8 81	
Rotterdam,	2	
Dyestuffs (otherwise undescribed)		
Hamburg,	31 cks.	
Antwerp,	22	
Farina —		
Hamburg,	300 bgs.	
Glue —		
Hamburg,	20 bgs.	
Soap —		
Hamburg,	1 cs.	
Starch —		
Antwerp,	126 cs.	

EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending November 10th.

Acids —					
Durban,	25 pks.	£23			
Alkali —					
Hobart,	1 t. 4 c.	£58			
Bombay,	2	7			
Alum —					
Canterbury,	2 t. 3 c.	£12			
Alum Waste —					
Calcutta,	39 t. 10 c.	£97			
Ammonia —					
Melbourne,	12 cs.	£46			
Durban,	20	29			
Ammonium Carbonate —					
Valparaiso,	1 t. 10 c.	£40			
New York,	25 kgs.	38			
St. Petersburg,	2 10	70			
Odessa,	180	221			
Calcutta,	7 cs.	10			
Ammonium Chloride —					
Antwerp,	1 t.	£30			
Cologne,	5 cks.	30			
Ammonium Sulphate —					
Ostend,	150 t.	£1,275			
Bruges,	700	5,950			
Ghent,	50	425			
Dunkirk,	60 2 c.	466			
Bremen,	254	2,144			
Valencia,	70	595			
Arsenic —					
Bluff,	2 t. 13 c.	£60			
Wellington,	1	25			
Borax —					
Auckland,	42 cks.	£103			
Rotterdam,	25	68			
Carbolic Acid —					
Riga,	15 cs.	£40			
Colombo,	12 dms.	8			
Amsterdam,	24 cks.	135			
Sydney,	10	27			
Pt. Elizabeth,	4	51			
Carbonic Acid Gas —					
Jersey,	58 tubes	£22			
Caustic Soda —					
Pt. Elizabeth,	9 c.	£10			
Canterbury,	10	9			
Brisbane,	21 t. 3	157			
Wellington,	5 10	51			
Chemicals (otherwise undescribed)					
Boston,	25 dms.	£41			
Brussels,	5 kgs.	33			
Perth,	36 pks.	19			
Zanzibar,	2 cs.	15			
St. John's, N.B.,	10	13			
Wellington,	9	35			
Adelaide,	20 cks.	33			
Barbadoes,	20 dms.	10			
Cologne,	23	125			
Antwerp,	13	250			
Dunkirk,	42	530			
E. London,	18	97			
Bombay,	4 cs.	105			
Shanghai,	2	11			
Melbourne,	20 40 62	481			
Hamburg,	4	32			
Rotterdam,	11 3 kgs.	100			
Citric Acid —					
Melbourne,	10 c.	£67			
St. Petersburg,	15 kgs.	59			
Brussels,	1 t.	120			
Antwerp,	1	120			
Amsterdam,	1	23			
Pt. Elizabeth,	1	7			
Coal Products —					
Alizarine					
New York,	25 cks.	£284			
Boston	27	350			
Aniline					
Boston,	30 cks.	£30			
Melbourne,	4 1 cs.	45			
Boulogne,	1	24			
Aniline Dyes					
Sydney,	1 cs.	£4			
Anthracene					
Dusseldorf,	61 cks.	£119			
Benzine					
Melbourne,	35 crts.	£80			
Benzol					
Rotterdam,	143 cks. 80 puns.	£1,173			
Creosote					
N. Orleans,	1,500 brls.	£1,075			
Creosote Oil					
Boston,	250 cks.	£191			
Naphthalene					
Paris,	79 cks. 20 bgs.	£40			
Pitch					
Boston,	500 cks.	£100			
Montreal,	100	1,200			
Dunkirk,	961 t.	1,000			
Hochfeld,		1,000			
Antwerp,	1,640	1,000			
Chantenay,	1,105	1,000			
Cette,	1,355	1,000			
Sydney,	25				

Pyridine		
Cologne, 15 cks.		£190
Rotterdam, 12		140
Tar		
St. Petersburg, 1,000 bbls.		£600
Sydney, 25		15
Pt. Elizabeth, 5 tanks		58
Toluol		
Rotterdam, 100 cks.		£687
Coal Products (otherwise undes.)		
Treport, 1 dm.		£10
Brussels, 1		9
Copper Sulphate		
Piræus, 3 t.		£36
Copperas		
Salonica, 26 t. 17 c.		£70
Canterbury, 5 10		90
Disinfectants		
Colombo, 60 cks.		£18
Sydney, 125 dms. 10 cs.		57
E. London, 200		38
Odesa, 6		13
New York, 30 bbls.		46
Madras, 17 pks.		26
Melbourne, 29		36
Dried Blood		
Dunkirk, 100 t. 4 c.		£600
Manure		
Valencia, 50 t. 14 c.		£375
Treguier, 145		780
New York, 2		32
Jersey, 49 9		349
Penang, 259 13		2,070
Orotava, 12 5		66
Cape Town, 376 10		1,994
Denia, 75		600
Landerneau, 249 15		1,400
Adelaide, 250		633
Nitric Acid		
Jersey, 20 crbys.		£40
Madras, 10 cs.		14
Oxalic Acid		
Sydney, 19 c.		£33
Oxygen		
Amsterdam, 8 cs.		£85
Phosphate		
Demerara, 300 bgs		£60
Phosphorus		
Melbourne, 4 cs.		£42
Potash		
Danzig, 19 c.		£19
Stettin, 5 t. 2		97
Bordeaux, 4 2		41
Hamburg, 1 4 2 cks.		39
Potassium Bichromate		
Piræus, 4 t. 9 c.		£111
Potassium Chlorate		
Canterbury, 4 c.		£7
Bahia, 3 cs.		14
Potassium Cyanide		
Sydney, 3 t.		£285
Shanghai, 1 10 c.		37
Montreal, 1 10 c.		180
Fremantle, 1		95
Potassium Prussiate		
Yokohama, 10 c.		£16
Salicylic Acid		
Sydney, 4 cs.		£70
Saltpetre		
Durban, 1 t. 10 c.		£30
Madreia, 15		19
Oporto, 13 3		243
Wellington, 1 6		28
Bahia, 2 14		56
Rio de Janeiro, 15 1		312
Sheep Dip		
Durban, 1,000 dms		£213
Falkland Is., 70 cks. 6		504
Cape Town, 850 16 c.		212
B. Ayres, 21 t. 11		463
Soda		
Cape Town, 5 t. 11 c.		£17
Rotterdam, 5		30
Sodium Bicarbonate		
Canterbury, 10 c.		£8
Cartagena, 10		8
Sodium Carbonate		
B. Ayres, 1 t. 4 c.		£30
Sodium Sulphate		
Ghent, 50 t.		£75
Sulphur		
Madreia, 14 c.		£6
Sulphuric Acid		
Durban, 15 pks.		£10
Tartaric Acid		
Melbourne, 10 c.		£67
Sydney, 1 t. 10 20 kgs.		288
Pt. Elizabeth, 1		

LIVERPOOL.

Week ending November 10th.

Acids		
Cape Coast, 3 cs.		£30
Alkali Waste		
Copenhagen, 19 t. 5 c. 3 q.		£70
Alum		
Madras, 9 t. 9 c. 3 q.		£52
Piræus, 12		4
Vigo, 1		5
Aluminous Cake		
Toronto, 20 t. 2 c.		£52
Ammonia		
Akassa, 10 cs.		£10
Ammonium Carbonate		
Bombay, 12 c. 3 q.		£26
Amsterdam, 5		7
Marseilles, 17		25
Santander, 1 2		25
Montreal, 3 8		75
Vera Cruz, 9 1		10
Ibrahil, 10		15
Yokohama, 2 8		70
Varna, 2 4		5
New York, 2 10		70
Vigo, 12		16
Copenhagen, 2 17		64
Ammonium Chloride		
Copenhagen, 1 t. 3 q.		£32
Samsoun, 1 1 c.		33
M. Video, 3 2		7
Calcutta, 1 4		37
Genoa, 6 16 2		134
Montreal, 3 17		71
Syria, 11		16
Alexandria, 3		93
Ammonium Sulphate		
Leghorn, 30 t. 9 c. 1 q.		£243
Calcutta, 5 3		40
Almeria, 30 7		240
Lisbon, 10 8		85
Valencia, 131 8 1		1,090
Genoa, 44 19 1		379
Barcelona, 100 5 2		822
Gd. Canary, 9 13		83
Arsenic		
Vigo, 3 c. 2 q.		£5
Bleaching Powder		
Baltimore, 37 cks. 21 cs.		
Bilbao, 39		15
Bombay, 791		105
Boston, 63		105
Calcutta, 63		105
Genoa, 15		15
Leghorn, 63		15
New York, 684		30
Passages, 30		30
Philadelphia, 340		20
Portland, On., 20		10 bbls.
Tampico, 63		10 bbls.
Venice, 63		10 bbls.
Vera Cruz, 101		10 bbls.
Pernambuco, 3 t. 1 c.		£22
Boric Acid		
Hioho, 5 t. 17 c.		£145
Halifax, N.S., 3		4
Antwerp, 1 10 1 q.		22
Sydney, 1 5		35
Borax		
Malaga, 1 t. 15 c. 3 q.		£28
Antwerp, 2 10		40
Halifax, N.S., 1 1		17
Hamburg, 27 19 1		448
Natal, 3 12 1		54
Vienna, 1		15
Montreal, 19 8 1		337
Fiume, 11		9
Sydney, 3		45
Rosario, 3 13		52
B. Ayres, 1 19		28
Genoa, 3 6		50
Stettin, 1 10		24
Bordeaux, 3		48
Constantinople, 2		32
Copenhagen, 37		558
Calcium Chloride		
Odesa, 10 t. 9 c.		£21
Gothenburg, 3 2		8
New York, 10 1 2 q.		24
Carbolic Acid		
Accra, 9 c.		£13
Larnaca, 1 t. 10		27
Antwerp, 4		15
New York, 9 18 1 q.		457
Calcutta, 3 1		8
Odesa, 6 2		23
Genoa, 4		14
Hamburg, 2 1		136
Piræus, 4		10
Carbon Bisulphide		
Sydney, 8 t. 2 c. 3 q.		£82

Caustic Soda—

Alexandria, 195 dms.		
Amsterdam, 49		
Antwerp, 25		
Bahia, 30		
Barcelona, 50		
Bilbao, 150		
Beyrout, 20		
Boston, 10		
Calcutta, 20		
Catania, 70		
Carril, 10		
Christiania, 10		
Coronel, 37		
Coruna, 20 cks.		
Dunkirk, 38		
Fiume, 47		
Galatz, 15		
Genoa, 216		
Gothenburg, 10		
Hamburg, 60		
Havre, 25		
Hioho, 600		
Hong Kong, 118		
Ibrahil, 113		
Karachi, 10		
La Guayra, 20		
Leghorn, 53		
Lisbon, 640		
Malaga, 40 pks.		
Marseilles, 200		
Mauritius, 20		
Melbourne, 256		
Montreal, 1,035		
Naples, 50		
Nagasaki, 120		
N. Orleans, 121		
New York, 400		
Odesa, 505		
Oporto, 35		
Pernambuco, 4		
Piræus, 70		
Puerto Cabello, 16		
Quebec, 50		
Rangoon, 70		
Rio de Janeiro, 30		
Rotterdam, 25		
Samarang, 21		
San Francisco, 35		
San Sebastian, 145		
Santos, 3		
Seville, 150		
Shanghai, 37		
Sydney, 60		
Trieste, 30		
Valparaiso, 75		
Vancouver, 68		
Vera Cruz, 172		
Vigo, 21		
Chemicals (otherwise undes.)		
Calcutta, 48 t. 18 c. 1 q.		£260
Melbourne, 10		12
Montreal, 3 13 1		20
Bombay, 9		17
Antwerp, 1 10		42
Yokohama, 2 10		70
Hioho, 2 10		157
Hamburg, 1		28
Odesa, 2 10 1		70
Philadelphia, 33 17		1,013
China Clay		
Bahia, 4 t.		
Barcelona, 6 14 bgs.		
Bilbao, 15		
Bombay, 21 cs.		
Boston, 56 cks. 949		
Calcutta, 69		
Karachi, 10		
Montreal, 60		
Naples, 40		
New York, 400		
Philadelphia, 200		
Rio de Janeiro, 16		
Citric Acid		
Victoria, 2 c.		£12
Coal Products		
Aniline Colours		
Boston, 8 cs.		
Aniline Dyes		
Montreal, 12 cks.		
Aniline Salts		
Alexandria, 6 cks.		
Boston, 14 31 cs.		
New York, 40		
Rotterdam, 2 puns.		
Montreal, 24		
Anthracene		
Rotterdam, 48 bbls.		
Creosote		
Bordeaux, 250 cks.		
Naphthaline		
Barcelona, 9 cks.		
Naphthol		
Barcelona, 14 cks.		

Pitch		
Sydney, 5 cks.		
Tar		
Galatz, 20 bbls.		
Philadelphia, 37 t. 10 c.		
Sherbio, 20		
Toluol		
Copenhagen, 150 bbls.		
Coal Products (otherwise undes.)		
New York, 44 cks.		
Copper Sulphate		
Venice, 6 t. 9 c.		£99
Genoa, 14 4		913
Campana, 2		37
Vancouver, 2 10 1 q.		41
Antwerp, 15 3		314
Salonica, 2 1 3		31
Catocolo, 1 3		103
Patras, 5 5		44
Gothenburg, 2 16 2		95
Copenhagen, 5 18 2		16
Piræus, 1 1		32
Galatz, 1 19 1		17
San Sebastian, 2 19		46
M. Video, 3		51
Havre, 1 5		21
Rouen, 14 16 3		247
Ghent, 4 19 1		82
Constantinople, 2		34
Leghorn, 5 5 3		87
Hamburg, 2 9 1		30
Bombay, 10		160
Singapore, 5		81
Melbourne, 1		16
Vigo, 1 4		19
Bordeaux, 120 10 2		1,912
Odesa, 25 2		382
Copperas		
San Francisco, 14 t. 4 c. 3 q.		£30
Syria, 4		2
Disinfectants		
Karachi, 1 t.		£30
Hong Kong, 2 c.		4
Bahia, 9		18
Guano		
Seville, 19 t. 17 c.		£157
Lime		
Natal, 14 t. 18 c. 1 q.		£29
Magnesia		
Coruna, 1 cs.		
Lisbon, 4 5 tcs.		
Philadelphia, 42		
Rio de Janeiro, 3		
Vera Cruz, 11		
Magnesium Carbonate		
Rio de Janeiro, 5 c. 1 q.		£11
Magnesium Sulphate		
Alexandria, 100 bbls.		
Manure		
Landerneau, 75 t. 8 c.		£302
Mineral White		
Lisbon, 60 bgs.		
Muriatic Acid		
Pernambuco, 13 c.		£
Nitric Acid		
Bahia, 1 c. 3 q.		£63
Paint		
Accra, 1 cks.		
Alexandria, 88 pks.		
Antwerp, 40		
Assinee, 20 kgs.		
Belize, 131		
Calcutta, 9 bbls.		
Cephalonia, 2		
Gibraltar, 117		
Gd. Bassam, 21 1		6
Havana, 4 pks.		
Manaos, 40 c.		
Manila, 13		
New York, 1 bx. 10 dms.		
Para, 225 tins		
Parnahyba, 12		
Pernambuco, 1		
St. John's, 21 pks.		
Rosario, 21 pks.		
Sherbio, 112 kgs.		
Sierra Leone, 148		
Sydney, 132		
Valparaiso, 272		
Painters' Colours		
Antwerp, 4 cks.		
Baltimore, 60		
Bombay, 1 cs.		
B. Ayres, 2		
Cartagena, 160 kgs. 2		
Ceara, 25		
Havana, 9 2 tcs.		
Kingston, 40 2 bbls.		
Kustendjic, 2		

Malta,	200	8
Manaos,		8
Montreal,	5	pks.
Penang,	6	
San Francisco,	75	dms.
Santor,		22 cs.
Vera Cruz,	1	200*kg.
Vigo,		25 bils.

Paraffin Wax—

Barcelona,	120	bgs.
Boston,		100 cs.
Brindisi,	5	
Catania,	10	
Corfu,		12
Leghorn,	130	
Oporto,	22	
Patras,		38
Tampico,	40	

Phosphoric Acid—

Puerto Cortez,	2	t.
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Potassium Bichromate—

Barcelona,	4	t.
Halifax,	7	1 q.

Potassium Carbonate—

New York,	14	t.
Yokohama,	1	3
Boston,	19	13

Potassium Chlorate—

Libau,	15	t.
Fairwater,	1	10 c.
Konigsberg,	1	
Rotterdam,	2	15
Kingston,	1	
Amsterdam,		10
Gothenburg,	2	10
Sydney,	1	10
New York,	14	10

Potassium Cyanide—

Melbourne,	2	t.
Penang,		11
Philadelphia,	5	

Potassium Nitrate—

Para,	10	c.
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Salt—

Akassa,	260	t.
Algoa Bay,	8	18
Antwerp,	136	
Assinee,	12	5
Axim,	7	10
Baltimore,	300	
Banana,	15	
Boston,	165	
B. Ayres,	32	10
Calcutta,	2,864	50 cs. 732 tins
Cape Lahou,		220 sks.
Ch'lottetown,	4,800	bgs. 15,193
Conakry,	4,910	2,489
E. London,		625
Faroe Islands,	65	t.
Fernando Po,		10
Fuca,		900
Ghent,	250	
Gd. Bassam,		250
Halifax,		600
Hamburg,		1,300
Kingston,	1,500	bgs.
Landana,		2,850
Manaos,	1,000	
Malta,		30 cs.
Manob,	1,494	
Montreal,		25
N. Orleans,		17,211
New York,	1,250	t.
Noqui,	20	
Opobo,	50	
Old Calabar,	50	
Para,	312	10 c.
Pt. Natal,	20	
Quissango,	15	
Rio de Janeiro,	2	13
Rotterdam,	300	200 cs.
Sherbro,	100	
Sierra Leone,	101	13
Sinoe,	24	11
Sulymah,	30	
Talcahuano,	1	13
Valparaiso,	720	100
Vancouver,	1,000	bgs. 4,000
Victoria, B. C.,	175	t.

Salt Cake—

Hong Kong,	1	t.
Delagoa Bay,	4	19
E. London,	5	3

Saltite—

Copenhagen,	10	t.
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Sheep Dip—

San Francisco,	5	t.
E. London,	2	15
Pt. Natal,	5	10
Punta Arenas,	2	
B. Ayres,	41	9

Soap—

Accra,	225	bxs.
Addah,	20	
Alexandria,		28 cs.
Algoa Bay,	600	20
Amsterdam,	123	
Antwerp,	21	2
Attaboe,	58	
Axim,	400	
Barbadoes,	225	
Batavia,	3,000	
Belize,	350	
Bayin,	150	
Bombay,	287	45
Boston,		30 pks.
Calcutta,	37	625 bils.
Cape Town,	1,500	
Chama,	50	
Conakry,	50	
Curacao,	208	
Delagoa Bay,	700	43
E. London,	690	30
Gibraltar,	120	20
Guadeloupe,		200
Hamburg,	340	
Hong Kong,	330	
Karachi,	561	34
Kingston,	2,150	1
Lagos,	345	
Las Palmas,	1,400	
Loango,	40	
Macassar,	600	
Madras,		11
Manaos,		25
Mauritius,	1,010	
Menado,	1,000	
Montreal,		2,321
Mossel Bay,	100	
New York,	51	
Opobo,	100	
Old Calabar,	1,000	25
Parnanyba,		500
Patras,	12	
Penang,	417	
Pitesti,	1	
Pt. Elizabeth,		950 pks.
Pt. Natal,	1,250	165
Pt. Said,	6	kgs.
Rangoon,	604	bxs.
Rotterdam,	330	
Rufique,	50	
St. John's,	110	
St. Thomas,	200	
Shanghai,	300	
Sierra Leone,	220	
Singapore,	423	
Tangiers,		5
Teneriffe,	200	
Tocopilla,		10
Trinidad,	176	
Valparaiso,	272	1

Soda Alkali—

Leghorn,	163	brls.
Lisbon,	100	
Odessa,	525	
Zante,	107	

Soda Ash—

Alexandria,		100 brls.
Antwerp,		100 bgs.
Baltimore,		63 cks.
Barcelona,		20
Boston,		151
Brisbane,		107
B. Ayres,		50
Copenhagen,	200	
Drammen,	20	10
Dunedin,		24
Genoa,	270	
Ghent,	650	25 tcs.
Gothenburg,		20
Hamburg,	4,341	
Hiogo,		200
Hong Kong,		143
Konigsberg,	100	
M. Video,		150 brls.
Montreal,	430	20 tcs. 50
New York,	1,000	33
Oporto,		10
Palemo,	58	
Patras,		40 brls.
Philadelphia,	2,664	123 tcs.
Portland,		66
Puerto Cabello,		8
Rio de Janeiro,		330 brls.
Rotterdam,	50	10
Salonica,		60
Samarang,		44
San Sebastian,		73
Smyrna,	100	
Sourabaya,		50
Varna,		50
Venice,	300	
Vera Cruz,		50
Vigo,		10
Yokohama,		150

Wellington,		10 cks.
Zante,	127	425

Soda Crystals—

Alexandria,		20 brls.
Boston,		140
Calcutta,		25
Fremantle,	187	kgs.
Gibraltar,		30
Halifax,	60	
Honolulu,	50	
Madras,	15	
Malta,	20	61
M. Video,	67	10 cs.
Montreal,	200	125 pks.
New York,		1,424 brls.
Pt. Louis,		280
Pt. Said,	7	140 cks.
Quebec,		15
Smyrna,		117
Valparaiso,		34

Sodium Arseniate—

Lisbon,		1 ck.
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Sodium Bicarbonate—

Adelaide,	90	kgs.
Amsterdam,		50 bgs.
Antwerp,	50	
Auckland,	100	
Barcelona,	335	
Bombay,	150	
Brisbane,	450	
B. Ayres,		30
Calcutta,	200	
Cape Town,	80	8
Catania,	20	
Charlottetown,	100	
Dunedin,	200	
Dunkirk,	18	
E. London,	12	12 brls.
Fremantle,	100	
Genoa,	50	
Halifax,	40	
Hamburg,		2
Hiogo,		18
Honolulu,	100	35
Kobe,	100	
Lyttelton,	25	
Madras,	75	
Marseilles,		20
Melbourne,	500	
Montreal,	750	
Odessa,	15	
Pasages,	80	
Perth,	100	
Pt. Louis,	20	
Pt. Lyttelton,	50	
Pt. Natal,	250	20 bgs.
Singapore,	520	
Wellington,	150	
Yokohama,	1,150	

Sodium Carbonate—

Boston,	56	brls.
Rotterdam,	50	

Sodium Chlorate—

Newfairwater,	20	brls.
Rotterdam,	40	kgs.
Santos,	20	

Sodium Hyposulphite—

New York,	200	kgs.
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Sodium Naphthionate—

Barcelona,	8	cks.
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Sodium Prussiate—

Boston,	20	cks.
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Sodium Silicate—

Corunna,	17	brls.
Mauritius,	10	

Sodium Sulphate—

Algoa Bay,		9 c.
Montreal,		2 cks.

Starch—

Nantes,	4	hds.
Pernambuco,	50	sk.

Strontia—

Hamburg,	122	t.
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Sulphur—

Montreal,	40	t.
New York,	15	
Boston,	275	11
Lagos,	6	1,176

Sulphuric Acid—

Pernambuco,	18	c.
Manaos,	7	

Superphosphates—

Barcelona,	100	t.
Adelaide,	5	18 c.
Landerneau,	130	19
Gd. Canary,	6	
Valencia,	350	2
Nantes,	34	7

Varnish—

Barcelona,	2	cs.
Coronel,	3	

Genoa,	2	cks.
Leghorn,		3
Parnahyba,		10 dms.
Rotterdam,		2
Salonica,	10	
Santander,		10 brls.
Seville,	8	
Valparaiso,		10

Zinc Chloride—

Varna,	2	t.
Boston,		6

Zinc Oxide—

Victoria,	1	t.
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Zinc Sulphate—

Montreal,	4	t.
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MANCHESTER

Week ending November 1

Alum—

Aleppo,	25	brls.
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Ammonium Carbonate—

Antwerp,	3	cks.
Copenhagen,	23	cks.
Hamburg,	17	
Rotterdam,	5	

Ammonium Chloride—

Alexandria,	5	cks.
Alexandria,	50	
Beyrout,	10	
Bushire,	10	
Mersyne,	5	

Aniline Colours—

Hamburg,	1	cs.
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Chemicals (otherwise under—)

Treport,	1	ck.
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Copperas—

Alexandria,	150	brls.
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Cottonseed Oil—

Tunis,	110	brls.
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Farina—

Hamburg,	10	cks.
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Glue—

Rotterdam,	2	cks.
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Linseed Oil—

Alexandria,	6	brls.
Beyrout,	15	

Naphtha—

Treport,	50	cks.
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Naphthylamine—

Hamburg,	28	cks.
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Nitrous Oxide Gas—

Copenhagen,	1	cs.
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Paint—

Jaffa,		3 brls.
Bahia,		8 cks.

Painters' Colours—

Beyrout,	15	brls.
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Paraffin Wax—

Hamburg,	5	cs.
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Pyridine—

Rotterdam,	12	cks.
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Soap—

Treport,</

Caustic Soda—Helsingfors, 6 cks.
Wyburg, 25**Chemicals (otherwise undescribed)**

Amsterdam, 112 cks.
Antwerp, 4 3 cs.
Bremen, 3
Bombay, 180 1,250 brls.
Christiania, { 29 6 30 pks.
 { 3,502 lbs.
Copenhagen, 18 40 pks.
Danzig, 2 25
Gothenburg, 3 2
Helsingfors, 179 15 dms.
Hamburg, 3 8
Königsberg, 22 595 brls.
Kurrachee, 20 68
Rotterdam, 18 150 pks.
St. Petersburg, 3 5
Stettin, 48
Wyburg, 48

Cottonseed Oil—

Amsterdam, 2,185 c.
Antwerp, 1,069
Bremen, 198
Christiania, 155
Danzig, 200
Dunkirk, 100
Gothenburg, 120
Hamburg, 1,598
Königsberg, 50
Norfolk, 60
Rouen, 400
Rotterdam, 1,112
Stettin, 618

Creosote—

Antwerp, 50 cks.
New York, 500 brls.
Stettin, 10

Dyestuffs (otherwise undescribed)

Antwerp, 1 ck.
Christiania, 25 bgs.
Danzig, 20 cks. 9 cs.
Rotterdam, 5
Stettin, 58 bgs.

Glue—

Hamburg, 4 bgs.

Linseed Oil—

Amsterdam, 199 c.
Bergen, 21
Bombay, 1,003
Christiania, 381
Copenhagen, 17
Drontheim, 38
Kurrachee, 141
Stockholm, 56

Logwood—

Stettin, 85 bgs.

Manure—

Stettin, 3,096 bgs.

Naphthol—

St. Petersburg, 73 bgs.

Paint—

Amsterdam, 57 cks.

Painters' Colours—

Antwerp, 89 cks. 25 cs.
Bergen, 3
Bombay, 11 150 863 kgs.
Christiania, 17 5 pks.
Copenhagen, 2 3 1 dm.
Drontheim, 13 1 1 pk.
Danzig, 30
Gothenburg, 1
Ghent, 3
Hamburg, 2 1 dm.
Helsingfors, 120 1 227
New York, 92
Rouen, 21 2
Rotterdam, 29 3
Reval, 1
Riga, 3
Stockholm, 4 3
Stettin, 2

Paraffin Wax—

Danzig, 10 cs.

Pitch—

Antwerp, qty.
Dunkirk, 200 t.
Hamburg, 1 ck.
Helsingfors, 73

Soap—

Gothenburg, 5 cs.
Hamburg, 2
Ghent, 5

Starch—

Copenhagen, 100 cs.
Stockholm, 1

Tallow—

Amsterdam, 24 cks.
Alexandria, 52

Bombay, 20
Gothenburg, 5
Stockholm, 65

Tar—

Amsterdam, 6 cks.
Antwerp, 6
Drontheim, 15
Dunkirk, 55
Hamburg, 10
Helsingfors, 154
Stettin, 20 t.

Varnish—

Amsterdam, 1 cs.
Bombay, 125 cks. 2 dms.
Gothenburg, 3
Riga, 3 4
Stockholm, 26 6
St. Petersburg, 10
Stettin, 10

Whiting—

New York, 100 bgs.

GLASGOW.

Week ending November 11th.

Acetate of Lime—

Rio de Janeiro, 2 t. 10 c.

Ammonium Sulphate—

Trinidad, 50 t. 3 1/2 c.
Demerara, 896 4 3/4

Boric Acid—

Rotterdam, £150

Borax—

Melbourne, £42 15s.

Carbolic Acid—

Rotterdam, £100

Chemicals (otherwise un-escruct)

Rangoon, £35

Coal Products—

Pitch

Hamburg, 498 t. 6 c.

Canada, £306

Karachi, 55

Danzig, 50 3

Rangoon, 21

Naples, 400

Caen, 350

Pitch and Tar

Bombay, £183

Tar

Riga, £302 10s.

Karachi, £25

Rangoon, 181

Russia, 583

Danzig, 4 t. 7 c.

Coal Products (otherwise undes.)—

Rotterdam, £85

Copperas—

Bombay, £50

Karachi, 30

Cream of Tartar—

Melbourne, £25

Extracts—

Christiania, £10 12s.

Karachi, £88

Victoria, 61

Farina—

Stockholm, 4 t.

Fustic—

Karachi, £52

Gelatine—

Sydney, £29

Indigo—

Queensland, £31

Iodine—

Hamburg, £3,155

Iron Sulphate—

Bombay, £28

Lead Acetate—

Bombay, £98

Linseed Oil—

Rio de Janeiro, 50 t. 4 1/2 c.

Litharge—

Bombay, £27

Magnesium Sulphate—

Christiania, £9

Canada, 97

Manganese—

Antwerp, £50

Manure—

Demerara, 64 t. 8 c.

Paint—

B. Ayres, £155

M. Video, 35

Brisbane, 69

Painters' Colours—

Trinidad, qty.
Amsterdam, £20
Rangoon, 59
Demerara, 59
Rangoon, 59
Sydney, 59

Paraffin Wax—

Paris, £30
Amsterdam, 5 t. 11 c.
Riga, 167
Fiume, 752
Turkey, 34
Danzig, 5

Potassium Bichromate—

B. Ayres, £52
Rouen, 396
Christiania, 215
Bombay, 190

Potassium Cyanide—

Adelaide, £210
Townsville, 1,575

Potassium Prussiate—

Christiania, £8

Si Icon—

Rotterdam, 125 t.

Sheep Dip—

B. Ayres, £64

Soap—

Trinidad, 15 1/2 c.

Bombay, 2 t. 18

Sodium Bichromate—

Rouen, 5 t. 1 1/2 c.

Bombay, 1 7/8

Sodium Tannate—

Trinidad, 2 t. 2 c.

Stannous Chloride—

Demerara, £25 17s.

Starch—

Rio de Janeiro, £54

Sulphur—

Demerara, 18 t. 15 1/4 c.

Sulphuric Acid—

Calcutta, £35

Demerara, 50

Kankinara, 70

Karachi, 75

Rangoon, 112

Tallow—

Rotterdam, 4 t. 4 c.

Tin Salts—

Trinidad, £39 12s.

Treacle—

Christiania, 17 t. 13 c.

Varnish—

Gibraltar, £43

Rio de Janeiro, 72

Santos, 59

Brisbane, 126

Sydney, 41

Verdigris—

Victoria, £20

White Lead—

Gibraltar, £25

Bombay, 23

Zinc Ashes—

Rotterdam, £160

TYNE.

Week ending November 6th.

Alkali—

Antwerp, 8 t. 4 c.

Rotterdam, 13 16

Ammonia—

Gothenburg, 2 t. 9 c.

Ammonium Carbonate—

Barcelona, 4 t. 4 c.

Ammonium Chloride—

Barcelona, 3 t. 2 c.

Ammonium Sulphate—

Barcelona, 50 t.

Odense, 5

Antimony—

Hamburg, 32 t. 10 c.

Rotterdam, 3

Antwerp, 2

Barium Bin oxide—

Hamburg, 5 t. 8 c.

Rotterdam, 12 15

Bleaching Powder—

Hamburg, 5 t. 9 c.

Antwerp, 68 3

St. Petersburg, 69 2

Gothenburg, 20

Christiania, 15 6

Aarhus, 2 6

Rotterdam, 13 3

Caustic Soda—

Hamburg, 40 t. 6 c.
Antwerp, 7 16
St. Petersburg, 155 14
Gothenburg, 20 6
Pernau, 24 3
Christiania, 2 18
Horsens, 1 9
Copenhagen, 3 9
Barcelona, 107 11

Litharge—

Gothenburg, 11 c.

Magnesia—

Hamburg, 7 c.

Antwerp, 8

Lisbon, 10

Barcelona, 5 t. 15

Paint—

Hamburg, 2 t. 5 c.

Antwerp, 2

Sevastopol, 3

Rotterdam, 15

Rosin Oil—

Rotterdam, 18 c.

Saltpetre—

Aarhus, 5 t. 7 c.

Soda—

St. Petersburg, 5 t. 3 c.

Christiania, 36 13

Constantinople, 33 14

Smyrna, 16 5

Rotterdam, 24 1

Soda Ash—

Hamburg, 6 t. 17 c.

Gothenburg, 50 5

Ghent, 10 17

Sodium Hyposulphite—

Batoum, 1 t.

Rotterdam, 1 4 c.

Sodium Silicate—

Rotterdam, 6 t. 9 c.

Sodium Sulphate—

St. Petersburg, 10 t. 3 c.

Gothenburg, 150

Sulphur—

Gothenburg, 140 t.

White Lead—

Lisbon, 2 t. 4 c.

Witherite—

St. Petersburg, 12 t. 5 c.

GOOLE.

Week ending November 3rd.

Benzol—

Rotterdam, 24 cks.

Chemicals (otherwise undescribed)

Amsterdam, 20 cks.

Coal Products (otherwise undes.)—

Amsterdam, 31 cks.

Antwerp, 100

Boulogne, 2 cs.

Ghent, 3

Hamburg, 8

Rotterdam, 49 11 cs.

Colours—

Amsterdam, 4 cks.

Ghent, 1

Hamburg, 26 cs.

Dyestuffs (otherwise undescribed)

Antwerp, 3 pks.

Manure—

Bruges, 247 bgs.

Pitch—

Antwerp, 151 t.

Salt Cake—

Ghent, 100 t.

GRIMSBY.

Week ending November 6th.

Alkali—

Port au Prince, 706 drs.

Coal Products (otherwise undes.)—

Dieppe, 1 ck. 5 cs.

Hamburg, 6 8 bts.

Rotterdam, 8

Colours—

Antwerp, 8 cks.

Dieppe, 10

Hamburg, 2

Port au Prince, 6 cs.

Soap—

Dieppe, 18 cs.

PRICES CURRENT.

WEDNESDAY, NOV. 17TH, 1897.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—		£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/9	&	8/9
" Glacial	"			40/-
Arsenic S.G., 2000°	"	1	4	0
Fluoric	per lb.	0	0	3 1/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0	10
" (Cylinder), 30° Tw.	"	0	3	0
Nitric 80° Tw.	per lb.	0	0	1 1/4
Nitrous	"	0	0	1 1/4
Oxalic	nett	0	0	3 1/4
Phosphoric, 1750°	"	0	0	11 1/2
Picric	"	0	0	11
Sulphuric (fuming 50 %)	per ton	15	10	0
" (monohydrate)	"	5	10	0
" (Pyrites, 168°)	"	3	0	0
" 150°	"	1	5	0
" (free from arsenic, 145°)	"	1	7	6
Sulphurous (solution) S.G. 1025	"	3	0	0
Tannic (pure)	per lb.	0	1	2 1/2
Tartaric	"	0	1	1 1/2
Arsenic, white powdered	nett	21	15	0
Alum (loose lump)	"	4	10	0
Alumina Sulphate (pure)	"	4	2	6
Aluminaferric	"	2	3	6
Aluminium (Ingot metal 98/99 %)	nett	148	0	0
Ammonia, Anhydrous	per lb.	0	1	3
" 880=28° B.	"	0	0	2 1/4
" =24° B.	"	0	0	1 3/4
" Carbonate	nett	0	0	3
" Muriate	per ton	18	0	0
" (sal-ammoniac) 1st & 2nd	per cwt.	33/-	&	31/-
" Nitrate	per ton	31	0	0
" Phosphate	per lb.	0	0	3 1/4
" Sulphate (grey) London	per ton	8	17	6
" (grey) Hull	"	8	17	6
Aniline Oil (pure)	per lb.	0	0	7
Aniline Salt	"	0	0	7
Antimony	per ton	29	5	0
" (tartar emetic)	per lb.	0	0	8
" (golden sulphide)	"	0	0	10
Barium Chloride	per ton	6	15	0
" Carbonate (native)	"	3	10	0
" Sulphate (native levigated)	"	42/6	to	65/-
Bleaching Powder, 35 %	nett	6	2	6
" Liquor, 7 %	"	3	10	0
Bisulphide of Carbon	"	12	0	0
Chromium Acetate (crystal)	per lb.	0	0	6
Calcium Chloride	per ton	2	5	0
China Clay (at Runcorn) in bulk	"	15/-	to	30/-
Coal Tar Products and Dyes:—				
Alizarine (artificial) 20 %	nett per lb.	0	0	6 1/4
Magenta	"	0	3	9
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0	0	6
Benzol, 90's	per gallon	0	1	10 1/2
" 50/90	"	0	2	1
Carbolic Acid (crude 60°)	per gallon	0	2	0
" (crystallised 40°)	per lb.	0	0	6 1/4
" (liquid 95/97 %)	per gallon	0	1	0
Creosote (ordinary)	"	0	0	2 1/2
" (filtered for Lucigen light)	"	0	0	3
Crude Naphtha 30 % @ 120° C.	"	0	0	10
Grease Oils, 22° Tw.	per ton	2	15	0
Pitch, f.o.b. Liverpool or Garston	"	0	8	0
Solvent Naphtha, 90 % at 160°	per gallon	0	1	8
Copper	per ton	48	3	9
" Sulphate	"	16	5	0
" Oxide (copper scales)	"	44	10	0
Glycerine (crude)	"	24	10	0
" (distilled S.G. 1250°)	"	40	0	0
Iodine	nett, per oz.	0	0	7 1/2
Iron Sulphate (copperas)	per ton	1	10	0
" Sulphide (antimony slag)	"	2	0	0
Lead (sheet)	"	14	2	6
" Litharge Flake (ex ship)	"	17	0	0
" Acetate (white)	"	23	0	0
" brown	"	17	0	0
" Carbonate (white lead) pure	"	17	0	0
" Nitrate	"	20	0	0
Lime, Acetate (brown) (ex ship)				
" (grey) (ex ship)	per ton	5	12	6
Magnesium (ribbon and wire)	per oz.	0	2	0
" Chloride (ex ship)	per ton	2	10	0
" Carbonate	per cwt.	1	17	0
" Calcined Magnesia	per ton	8	0	0
" Sulphate (Epsom Salts)	per ton	2	15	0
Manganese, Sulphate	"	16	0	0
" Borate	per cwt.	2	10	0
" Ore, 70 %	per ton	3	10	0
Methylated Spirit, 61° O.P.	per gallon	0	1	8
Naphtha (Wood), Solvent	"	0	2	9
" Miscible, 60° O.P.	"	0	3	7
Oils:—				
Cotton-seed	per ton	16	10	0
Linseed	"	16	10	0
Stearine	per ton	22	0	0
Phosphorus (yellow)	per lb.	0	2	2
" (red)	"	0	2	8
Potassium (metal)	per oz.	0	3	7
" Bichromate	nett per lb.	0	0	4 1/2
" Carbonate, 90% (ex ship)	per ton	16	10	0
" Chlorate	per lb.	0	0	3 1/4
" Cyanide, 98%	"	0	1	1
" Hydrate (Caustic Potash) 90%	per ton	23	10	0
" (Caustic Potash) 75/80%	"	19	15	0
" Potash Hydrate Liquid 50%	"	11	5	0
" Nitrate (refined)	per cwt.	1	1	6
" Permanganate	per cwt.	3	15	0
" Prussiate Yellow	per lb.	0	0	6 1/2
" Sulphate, 90 % (ex ship)	per ton	9	15	0
" Muriate, 80 % (do.)	"	8	10	0
Silver (metal)	per oz.	0	2	2 1/4
Sodium (metal)	per lb.	0	2	9
" Carb. (refined Soda-ash) 48 %	nett per ton	4	15	0
" (Caustic Soda-ash) 48 %	"	4	5	0
" (Carb. Soda-ash) 48 %	"	4	0	0
" (Alkali) 58 %	"	3	17	0
" (Soda Crystals)	"	2	5	0
" Acetate (ex-ship)	"	10	10	0
" Arseniate, 45 %	"	14	7	6
" Chlorate	per lb.	0	0	4 1/2
" Borate (Borax)	net, per ton	14	0	0
" Bichromate	per lb.	0	0	3 1/4
" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	"	8	10	0
" (74 % Caustic Soda)	"	8	2	6
" (70 % Caustic Soda)	"	7	7	6
" (60 % Caustic Soda)	"	6	7	6
" (pure liquor 90° Tw.)	"	3	12	6
" 77/78 % powdered (99 % hydrate)	"	12	10	0
" Bicarbonate	"	6	10	0
" Hyposulphite	"	5	5	0
" Manganate, 25%	"	15	0	0
" Nitrate (95 %) ex-ship Liverpool	per cwt.	0	7	6
" Nitrite, 98 %	per ton	26	10	0
" Phosphate	"	9	10	0
" Silicate (glass)	per ton	4	10	0
" (liquid, 100° Tw.)	"	3	7	6
" Stannate, 40 %	per cwt.	3	2	9
" Sulphate (Salt-cake)	per ton	0	19	0
" (Glauber's Salts)	"	1	7	6
" Sulphide	"	6	15	0
" Sulphite	"	5	0	0
Strontium Hydrate, 100%	"	10	15	0
Sulphocyanide Ammonium, 95 %	per lb.	0	0	5 1/4
" Barium, 95 %	"	0	0	4
" Potassium	"	0	0	6 1/4
Sulphur (Flowers)	per ton	7	10	0
" (Roll Brimstone)	"	6	10	0
" Brimstone: Best Quality	"	4	10	0
Superphosphate of Lime (26%)	"	2	5	0
Tallow (Beef)	"	18	10	0
Tin Crystals	per lb.	0	0	4 1/4
" English Ingots	per ton	65	15	0
Zinc (Spelter)	"	18	0	0
" Chloride (solution, 100° Tw.)	"	5	15	0
" Sulphate, Crystal	"	5	15	0

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Vol. XXI.

Contents.

PAGE	PAGE
Alkali and Bleach..... 337	Alkali Manufacture in America.... 343
Indigo Crop..... 338	Tar and Ammonia Products..... 344
List..... 339	Miscellaneous Chemical Market.. 344
Latest Complete Speci-..... 339	Report on Manure Material..... 344
ence..... 339	The Metal Markets..... 344
Manufacturers and..... 339	Liverpool Oil and Colour Market.. 344
Rules..... 340	Hull Paint, Oil, and Colour Report 344
Patent Agents..... 341	West of Scotland Chemicals..... 344
Companies..... 341	Tyne Chemical Report..... 345
Correspondence..... 342	New Companies..... 345
Cultivation..... 342	Gazette Notices..... 345
Position..... 343	Imports..... 345
	Exports..... 348
	Prices Current..... 352

NEW BROOMS.

THERE is no doubt that new brooms have a better chance of sweeping clean than old ones, but it is another thing altogether as to whether the new brooms will know as much as the old ones about the nooks and crannies in which to seek for dirt.

This is practically the position of affairs with the new Rivers Committee of the Manchester Corporation. The names of those gentlemen proposed for the Committee, as given in our last issue, were not adopted *in toto* on Wednesday, because several gentlemen refused to serve on the Committee.

It must be admitted that it is not surprising that some of them should have declined to continue on the Committee, since it would hardly have been compatible with a proper sense of dignity to have served any longer. Still, the reasons put forward by some of those who cried, "I pray thee have me excused," were amusing, especially the pleadings of the erstwhile critics of the Committee and their policy.

One of the most ardent critics begged for exemption because serving would interfere with the earning of his living as a checkweighman at a colliery. We think that if all the members of the Council were to decline service because their business or profession would suffer, there would soon be next to no Council at all. If this worthy instance cannot earn a living and also fulfil the duties he has pledged himself to, he should devote himself to the living. It would be an easy matter to resign from duty on some other Committee; in fact we think his duty to the public demands service on the Rivers Committee, because he has shown by his criticism that the ratepayers have long been losing the services of a councillor who gives promise of being able to solve the sewage difficulty single-handed—on paper. We are glad to see he has to serve.

There is much good blood among the new blood on the Committee, and we have great hopes of its ultimate influence. At the same time it is only right and fair that those who have been such active critics should be compelled to justify their qualifications as critics.

No sane man decries the work of another unless he is convinced that the holes he picks can be competently mended, and what could be more desirable than to entrust the future of the Manchester sewage to those who have riddled the culvert scheme with a constant fire of ill-considered rhetoric? Doubtless these gentlemen have brilliant schemes up their sleeve. We apologise! This form of speech is, we know, painfully offensive to the Council just now, so we will describe the schemes as being *in nubibus*; it will be nearer the truth, and is more stimulating to the intellect.

The ratepayers must therefore have cause to congratulate themselves. With things in the hands of those who knew enough to hound down the old committee and its policy marvellous changes should result. We may shortly expect to see swimming galas in the Ship Canal, trout leaping in

ADVERTISEMENTS.

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the Davyholme effluent, the Mersey and Irwell Joint Committee idle-handed for want of somebody to sue or prosecute (unless it is those who steal drinking water from the Irwell in preference to paying for the Thirlmere supply), and the sewage works a park in which public meetings will be specially authorised on account of the convenient proximity of the settling-tanks in case of too much exuberance.

All this and more may be hoped for; either at a saving to the ratepayers that will enable them to erect half-a-dozen more gold-lettered commemoration tablets, or else—joyful tidings!—there will be the devil to pay. Now is the time to back your fancy.

The outcome of the changes made is that the resignations of Aldermen M'Dougall, Southern, Walton Smith, and Thompson, and Councillors Bradley and O'Doherty have been accepted, and their places filled by Alderman Griffin, Councillors Scott, Shuttleworth, Harrop, Hampson, and Boyle. The following is, therefore, the constitution of the new Rivers Committee:—The Lord Mayor, Aldermen Higginbottom, Sir Bosdin Leech, Griffin, and Reade, and Councillors Ashton, Scott, Brocklehurst, Shuttleworth, Dreyfus, Harrop, Grimshaw, Lambert, Maben, Milnes, Hampson, Saxon, Shann, Sutton, Trevor, Whyman, and Boyle.

EXPORTS OF ALKALI AND BLEACH.

THE following returns, which are taken from the official foreign and colonial statistics of the United Kingdom, give the amount and value of alkali and bleaching materials shipped to the undermentioned countries for the month of September, 1897, as compared with the same month of 1896:—

ALKALI.

Port.	1896.	1897.	1896.	1897.
	Cwts.	Cwts.	£	£
Russia	26,352	19,950	7,420	5,744
Sweden and Norway	13,620	12,418	2,224	3,219
Germany	24,060	16,633	5,117	3,931
Holland	8,134	13,729	1,567	2,563
France	3,344	3,947	1,266	1,190
Spain and Canaries	26,671	30,328	9,612	9,914
Italy	18,930	18,404	6,156	5,286
United States	135,373	101,472	32,149	19,812
Australasia	18,937	22,311	5,581	7,203
British North America ..	19,225	24,963	5,131	5,808
Other countries	86,680	124,440	24,331	34,413
Total	381,326	388,595	100,554	99,083

BLEACHING POWDER, ETC.

Port.	1896.	1897.	1896.	1897.
	Cwts.	Cwts.	£	£
United States	51,344	66,348	17,170	20,532
Other countries	38,698	44,068	12,822	13,951
Total	90,042	110,416	29,992	34,483

THE BIRMINGHAM WATER SUPPLY.—It will be reassuring to water-drinkers in Birmingham to know that the water supplied through the public tap has emerged with conspicuous credit from the searching ordeal of a bacteriological examination. The quality of the Corporation water supply is, of course, regularly tested by chemical analysis; but in view of the grave allegations concerning the origin of the typhoid epidemic at Maidstone, the Health Committee determined to make assurance doubly sure by submitting the local supply to bacteriological examination. For this purpose, samples of water were taken from three distinct zones, representative of the high, middle, and low levels, a check being thus established on each of the sources of supply. The examination was made by Professor Frankland, of Mason College, an eminent authority on bacteria, and the report was received at a meeting of the Health Committee. We are informed that the results of the examination were "very satisfactory," so that water-drinkers may still indulge in their favourite beverage untroubled by apparitions of bacteria.

THE INDIAN INDIGO CROP.

THE First General Memorandum on this crop includes the first report on the crop in Bengal and Madras, the second forecast for the Punjab, and the final forecast for the North-Western Provinces and Oudh. In Lower Bengal and in Behar the insufficient rainfall of 1896 and the early withdrawal of the monsoon retarded sowings, and the seedlings withered in many places. The growing season has also been unfavourable in Behar, where both first and second cuttings have been very poor. The area estimated to have been sown is 542,000 acres, or 29,400 acres less than the revised estimate of 1896. The cultivation in the twelve important growing districts of Bengal and Behar, is estimated at respectively 235,300 and 273,300 acres, or altogether 9 per cent. of the whole area in the Lower Provinces. It is estimated that the yield will be five-sixths of an average crop in Bengal, and about two-thirds in Behar, and for the whole province, 69 per cent. In the North-Western Provinces and Oudh the area is estimated at 376,899 acres, 271,123 being in the Doab. This is 13.6 per cent. smaller than last year, but nearly 20 per cent. larger than the average. The condition of the crop generally is reported to be about two-thirds of a full average. Messrs. W. Moran & Co., Calcutta, estimate the crop in Bengal and the North-Western Provinces at 115,000 maunds—viz., Lower Bengal, 17,500; Behar, 41,500; Benares, 16,000; and North-Western Provinces, 40,000. The last-named figures correspond closely with the total estimate of the local officials, which is—Benares, 10,000; Doab, 46,248 maunds. In the Punjab the area sown in the seven districts from which reports have been received is estimated at 130,600 acres, or 3½ per cent. less than last year. The condition of the crop is reported to be generally good. In Madras the area sown to the end of August is estimated at about 207,800 acres, or nearly 21 per cent. below the average. Absence of timely rains and the extensive cultivation of food grains are responsible for the decrease. There has been an increase in the Carnatic, where the season was favourable.

SOCIETY OF CHEMICAL INDUSTRY (Manchester Section).—The second meeting of the session will be held on Friday, December 3rd, 1897, at the Victoria Hotel, Manchester, in the rooms of the Chemical Club, at seven p.m., when a paper will be read by Dr. Grossman, on "Indigo Testing with Permanganate." F. H. Bowman, Esq., D.Sc., F.R.S.E., etc., will also make a communication on "Steam, gas and electrical energy as applied to chemical works."

MANCHESTER MEN AND THE LIVERPOOL GENTLEMAN.—An interesting case was heard at the Manchester Assizes last week, in which Mr. E. Powell, of Price's Candle Company, and Mr. C. Watson, chemical manufacturer, Manchester, brought actions against the Snowdon Steamship Company for assault and false imprisonment. The plaintiffs went for a trip last September to Menai Bridge with tickets booked by the Cheshire Lines Committee. The steamboat only went to Beaumaris. The plaintiffs after showing their tickets refused to give up the return half, being desirous of lodging a complaint with the railway company. At Llandudno the purser joined the boat, and, according to the evidence, the following amusing passage of words took place, the purser first asking, "Are you the fellows who won't give up your tickets?" The plaintiff then said, "I am going to keep half the ticket to ground my complaint against those who issued them." At the same time Mr. Powell produced his card bearing his name and address, and offered it to the defendant, who tore it in pieces and threw it on to the deck of the vessel in the presence of a considerable number of persons, and said, "How do I know that is your card? I don't believe it is your card. I am not going to take it." When witness refused on the steamer to give up his ticket, the defendant said to him, "You are a Manchester man, and you think you are clever, but I'll show you what a Liverpool gentleman can do when we get to the landing stage." When the vessel reached Liverpool the defendant again asked him for the ticket, but he still declined, whereupon a constable was called on board. When the officer came forward the defendant said to him, "Take those two men and lock them up all night." Witness turning to defendant said, "And who are you, pray?" and the reply was, "I am manager and owner of this steamboat." After hearing the charge made by the defendant, the constable turning to witness and his friend then said, "Come on." (Laughter.) Witness said, "We are not coming on, you have got to take us, we are given into your custody." The constable then said, "You are my prisoners." Witness replied, "Now we are coming." (Laughter.) Turning to the defendant, plaintiff said, "Do you propose to degrade us in this ignominious manner by taking us through the streets with a common constable?" and he said, "Yes." Witness asked that they might have a cab, but the defendant said, "Walking is good enough for you." (Laughter.) The arrest was witnessed by the people on the steamer, some of whom knew the plaintiff. At the suggestion of witness to the constable the defendant came on to the police office and made the charge to an inspector, who, upon hearing it, refused to receive it. Judgment was finally given for the plaintiffs, with £90. damages for the joint actions. The case was conducted by Mr. McCall, Q.C., and Mr. Bradbury, instructed by Messrs. Lingard and Gaunt, Manchester.

The Patent List.

This list is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of E. Davis and Alfred R. Davis, who report professionally the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Smoking Consumer. W. Farrer and J. Rollett. 25,874. November 8.
 Cytic Cells. G. and G. W. Bell. 25,890. November 8.
 Spouts for Ammonia Drums, etc. E. Beckton. 25,898. Nov. 8.
 Scale from Metal Sheets. F. Gastell. 25,944. November 8.
 Creosote Compound. N. P. Thompson. 25,945. November 8.
 Furnaces. G. Watson. 26,002. November 9.
 Lead Sulphide Ores. S. Ganeline. 26,046. November 9.
 Cure of Varnish. A. J. Smith. 26,065. November 9.
 Garbage. G. E. Gale. 26,067. November 9.
 Tannings. J. Birtwistle. 26,077. November 9.
 Cure of Indiarubber, etc. H. Markus and G. B. Behrens. 26,107. November 10.
 Soaps. W. E. Woodyear. 26,137. November 10.
 Oxalic Acid and Oxalates. M. Goldschmidt. 26,172. Nov. 10.
 Glycerine Explosives. E. E. Bichel. 26,174. November 10.
 Oils, etc. C. Culmann. 26,191. November 10.
 Paint. W. N. Hird. 26,268. November 11.
 Cyanides, etc. D. Lance and R. R. E. de Bourgade. 26,326. November 11.
 Preserving Composition. H. H. Lawe. 26,334. November 11.
 Iron and Steel. C. H. Alldred. 26,406. November 12.
 Apparatus for Generating and Applying Electric Currents. F. E. Elmore. 26,413. November 13.

TRACTS OF LATEST COMPLETE SPECIFICATIONS.

Abstracts are specially prepared for the Chemical Trade Journal, the rights of publication are reserved. This is the earliest of abstracts of Chemical and allied patents accessible to the public.

Apparatus for Use in Electrolysis, more especially adapted for Use in the Electrolysis of Zinc Chloride. F. Hurter and The Alkali Co., Ltd., both of G11, Exchange-buildings, Liverpool. Eng. Pat. 24,853. December 15, 1896.
 The apparatus consists of frames (of wood or slate) bolted together, forming a suitable diaphragm between each frame so as to divide up into a number of compartments, open and closed at the top only. The cathodes are placed in the open compartments, and of iron cylinders, with rounded ends, mounted on pivots at the bottom. The cathodes are either revolved by gearing or given motion by cranks. They are placed vertically, and as many in each open compartment as will allow them to turn freely when with the deposited zinc. The anodes are placed in the closed compartments. They are made of carbon, and, for the sake of convenience, are inserted in the sides of the compartments. The closed compartments, collect the chlorine, which is conveyed away. There are also pipes for introducing fresh quantities of zinc solution and circulating the electrolyte. There are five illustrations of the specification.

Process for Treating Sewage Sludge. B. Walker, Hawes, O., Yorks. Eng. Pat. 24,853. November 6, 1896.

The sludge is mixed with the sludge. About $\frac{1}{2}$ of the weight of the sludge is the minimum amount to be used. It ranges from this up to according to the amount of water in the sludge. The addition of the sludge is carried out in an ordinary lime mixer. It is possible to get the best results by disintegrating the once formed cake from the presses, and incorporating it with more sludge. On the second pressing a compact cake is obtained. This can be burnt without odor or smell. When iron precipitants are used the calcined cake is an ash that greatly resembles magnetite, and forms an excellent medium. In certain cases it can be ground to form a brown pigment. The pressed cake also has considerable manurial value. It is graded into sizes by sieving and a filter packed in the press. There are two figures showing the ventilating arrangements of the filter. There is a false bottom, and pipes are taken up from the filter to a main on the surface of the filter, which main goes into a chimney. By means of a damper in the main, the ventilation can be regulated at will.

Process in Purifying and Concentrating Sulphuric Acid, in part applicable to the Manufacture of Nitric Acid. G. Kynoch and Co., and A. T. Cocking, both of Lion Works, Witton, near Birmingham. Eng. Pat. 28,891. December 16, 1896.

The material operated upon is the weak waste acids from the manufacture of nitro-glycerine. After decomposing any nitro-glycerine that

may be present the acid is run into an egg-ended cast-iron retort mounted in a furnace. The exit pipe is connected with a condensing coil, which ends in two Woulff's bottles, the last of which is connected to an air pump. The retort is partially exhausted and the acid simultaneously heated. Nitrous fumes are drawn off, condensed, and collected in the Woulff's bottles. After the nitrous fumes cease coming over, the vacuum and heat are kept up until the vitriol reaches about 170° Tw.

In connection with nitric acid it is proposed to add nitrate of soda to the vitriol in the retort at once and distil off the nitric acid, thus saving the transference of the acid and reheating of the charge. The main use of the apparatus, however, is for the concentration of weak acid and separation of the nitrous and nitric acids it contains. There is one figure.

Improvements in and Relating to Material for Use in the Treatment and Purification of Sewage and other Impure Waters. W. B. Bottomley, King's College Strand, W.C. Eng. Pat. 29,288. December 21, 1896.

Mineral phosphate of lime containing too much alumina and iron oxide to be of any use in the manufacture of superphosphates, is treated with sulphuric or hydrochloric acid, or both. Enough acid is used to convert the iron and alumina into sulphates or chlorides without decomposing the phosphate of lime. The resulting mixture is added to the sewage in the necessary proportions. For domestic sewage the patentee found 8 to 10 grains per gallon sufficient to effect precipitation.

Correspondence.

"We do not hold ourselves responsible for the opinions expressed by our correspondents."

THE GREAT CITY FIRE.

(To the Editor of the Chemical Trade Journal.)

SIR.—The lesson of the great fire in London on the 19th inst. is this—that the proprietors of large buildings (such as warehouses and factories, especially those situated in crowded thoroughfares) should provide their own fire appliances. This fire broke out in the middle of the day, when the members of the staff are as a rule in attendance at the various warehouses; and, doubtless, had the necessary fire extinguishing appliances been available at the establishment in which the outbreak occurred it would have been extinguished at once, and nothing whatever would have been heard of it, except an incidental reference in the fire brigade report. This, however, could not be done, and the enormous traffic in the narrow streets made a rapid attendance of the public fire brigade a matter of absolute impossibility. A fire in the middle of the night is apparently less dangerous than one in the middle of the day at this part of London.

The public fire brigade has a right to expect that the owners and occupiers of large business premises will assist it to the extent of providing such simple apparatus as will be sufficient to cope with a fire discovered in its early stages—Yours, etc.,

MERRYWEATHER AND SONS, LTD.

Greenwich, S.E., November 24th, 1897.

THE ENGINEERS' STRIKE.

(To the Editor of the Chemical Trade Journal.)

SIR.—Let me state our own experience since this long and lamentable strike began.

To equip the new workshops we built here, we placed orders in the month of May with engineering firms at Halifax, Manchester, and Sowerby Bridge for lathes, wood-working machinery, etc. The strike supervened and the firms returned our orders. It was imperative that we should obtain a few of the machines, so I visited Germany, and Messrs. Barnes, Burns, Mann or any official or member of the A.S.E. can look at our German machines on any day they care to visit our works. They are at least equal to English make, and 20 per cent. cheaper. It was, sir, I can assure you, with great reluctance I decided to meet our pressing wants with German machinery to hold our markets against foreign competition. What the Socialists—who are now the trade union leaders—call the "bogy of foreign competition" is no bogy, but is in an alarming manner getting daily more widespread and active. Why? Because our workmen, through the benumbing and dead-leveling rules of the new unionism, are not now as a body in the front in the matter of effort to produce a paying output for a given wage; and if the system of the "least work for most money" is not abandoned by the engineers and the men in the allied trades, this country as a great manufacturing nation must recede in the race, and Great Britain's days of commercial supremacy be numbered. The handwriting on the wall is already visible to wise and discerning men, who look with grave apprehension to the many advantages now enjoyed

by the United States and Germany, and likely (unless the Socialist trade union leaders change their tactics) to be increasingly enjoyed by these countries relatively to our own. We have been so far the greatest industrial nation the world has seen, but we must depend more and more on our manufactures for the national income to purchase the food for our population. If once a decline sets in our manufacturing trades will go on the down-grade as rapidly as they advanced. I hope, therefore, the employers and the non-Socialistic workmen will combine to fight our common commercial enemies: find out jointly for the advantage of both the economic and natural advantages possessed by our most dangerous competitors, and arrange to hold our trade, as I believe in the trite words which have embellished so many trade union banners—"United we stand, divided we fall"; but for Britain's sake let those Socialist trade union delegates who "kept the bag," like Judas, make all the reparation they can to the industries and followers they have betrayed, and "go out and hang themselves." Where is the £400,000, supposed to be invested for sick allowance and old age relief? Ought not that to have been kept and given to the poor instead of being wasted by trade union officials in a light-hearted strike, fomented and started by the Socialist leaders in London, with the hope of "sniping" down a few of the employers; but the "sniping unionists" found their rifles out of range when the employers federated their artillery. The employers have never before combined to repel the continuous attacks which one or other of them have had to face in some part of the country, and I hope they will keep their guns mounted and their ranks closed; indeed, I think it would be to the advantage of employers and employed if the former now selected a few of their number to retire from business and be paid from the federation fund, the same as Burns, Tillett, and Co. have been paid by the unions. It might be difficult to induce any employer to accept such a position, as they know there are far too many unproductive hangers-on to trade already. Still, as "Satan finds some mischief still for idle hands to do," so the Socialist trade union officials are eternally devising means to cripple trade, and a brigade of employers' sentries ought always to be on the alert to counteract the attacks of the trade union scouts. Of course, I shall be told that the employers have no right to combine to save their businesses. I suppose if James Watt, who attained the crowning distinctions in the engineering trade, came to Birmingham again the new unionist officials would not let him operate a machine. Yes, the inventor of the appliances from which our great engineering trade took its rise would be compelled, according to trade union rules, to "Beg his brothers of the earth to give him leave to toil." They might permit him to be the unskilled help to one of the A.S.E. "minimum men." The genius who conferred an immortal fame on the engineering trade, the "Hero of Industry," of whom Carlyle said "although no peerage was conferred on him by the Government or King, still he held the patent for his nobility immediately from the Almighty," would have been hunted from pillar to post by modern district delegates if he had attempted to touch a machine in an engineering shop "bossed" by the unionist officials.—Yours, etc.,

GILBERT LITTLE.

DYNAMITE IN THE TRANSVAAL. President Kruger, replying to a deputation from Zeerust last week, said that with regard to the dynamite question, when the 2,000 cases stored in the factory were consumed, he would insist upon the manufacturing of dynamite from the products of the soil of the Transvaal. If this were not done, the mines would be allowed to import their own dynamite under a system of import dues, but no permit would be issued for the importation of a single case of ingredients in the future.

PRESENTATION TO MR. DIBDIN.—A most interesting ceremony took place on Saturday last at the Holborn Restaurant, E.C., when the members of the staff of the Chemical and Gas Department of the London County Council gave a complimentary dinner to their late chief, Mr. W. J. Dibdin. The new chief of the department, Dr. F. Clowes, of Nottingham College, took the chair, and, in proposing the toast of the evening, pointed out that the work carried out by Mr. Dibdin as chief of the department reflected credit alike on the Council and himself. The chairman then presented to Mr. Dibdin, on behalf of the officers of the department, an illuminated address. Mr. Livingston, senior officer of the department, who read the address, bore testimony to the invariable kindness and courtesy of their late chief, and referring to his public usefulness instanced as an example his successful treatment of the London Sewage. The next toast, "The Chairman," was proposed by Dr. Teed in an appropriate and somewhat amusing speech, in replying to which Dr. Clowes confided to the company the "nick-name" by which he is known among his students at Nottingham, and which promises well for the continuance of the good feeling between chief and officers that has heretofore existed. On account of the recent arduous task imposed upon a sister department, the toast "The Fire Brigade," proposed by Mr. Livingston, was most enthusiastically received. The evening's proceedings were further enlivened by music and recitations. A vote of thanks to the hon. secretary, Mr. E. I. Jackman, terminated the

CHEMICAL MANUFACTURERS AND "SPECIAL RULES."

AT the Lancashire County Police Court, on Tuesday, before Mr. A. Yates, Q.C., and other magistrates, the Pomona Chemical Company, Cornbrook, were summoned by Mr. J. H. Rogers, inspector of factories, for a breach of the Factory and Workshops Acts. Mr. Rogers stated that the defendants occupied a large chemical works at Cornbrook. The summons was for a breach of special rules. The Act of 1891 authorised the Secretary of State to schedule any trade or occupation which was dangerous, and in 1892 the chemical trade was so scheduled, and special rules were prescribed. The first rule provided that every uncovered pit, pan, or other structure containing liquid of a dangerous character should be so constructed as to be at least three feet in height above the ground or platform; those already in existence that were of less height, or where such height was proved to be impracticable, were to be securely fenced. On the 11th ult. a man fell into a vat which contained boiling liquid. That accident, continued Mr. Rogers, was reported to him, and he visited the works on the following day. He found four large vats fixed on the ground floor of the premises. They were about 8 ft. in diameter and 6 feet deep, and were from 3 ft. to 7 ft. apart. It appeared that on the day of the accident a man named Whelan had been directed by a fellow workman to slacken the speed of a pump. This pump was situated between two of the tanks, and though no one saw the accident it was conjectured that, in going to the pump, the man slipped into the tank and received injuries which proved fatal. There was no fencing round the tanks, which he (Mr. Rogers) was told had only been in position about three weeks. The defendants had been working them for that time without any guard, but it was their intention to fix one. The penalty for a breach of the special rules was £10., but section 82 of the Act of 1878, as applied to a breach of special rules by the Act of 1895, said that where the accident had been caused by the neglect of the occupier to safeguard any appliance the penalty might not exceed £100. A part of that penalty might, in the discretion of the Secretary of State, be applied to the relief of the relatives of the deceased person. In the present case there were no dependent relatives, but whether the Bench inflicted the penalty under section 82 or not, it would not be dealt with otherwise than as an ordinary penalty under the Act. He asked the Bench to treat the case as one in which the maximum penalty was one of £100.—John Leach, a workman employed by the defendants, stated that on the day in question he instructed Whelan to steady a pump. He heard Whelan cry out, and upon going to his assistance found him in a tank. The tanks would be six or seven feet deep, and about the same in diameter, and at the time in question they contained about 18 inches of liquid salts. Witness had turned the steam off a few minutes before the accident, but the liquid would be nearly boiling—sufficient to scald anyone. The pump was between two "mixers," and to reach it Whelan would have to pass between two tanks. There was a pipe connected with the pump that Whelan could have got hold of, but there was a space between the pipe and the tank. The tanks were now railed off. Had they been so before the man would not have fallen in. He had worked amongst the vats and never thought of danger.—Mr. Rogers went into the witness box and was sworn. He produced a certified copy of the rules. Similar ones, he stated, had been sent to the defendants.—In answer to Mr. Jordan (who defended), Mr. Rogers said he received a communication with respect to the rules, from the defendants, as follows:—"We have received your communication, and it shall have attention."—Mr. Jordan said that no special rules had been received by the defendants, and put it to Mr. Rogers that the defendants were not bound by special rules until they were served by the chief inspector.—Mr. Rogers: That is so.—Mr. Jordan: So that, if they had not been served, they would not be bound by them?—Mr. Rogers: That is so.—Mr. Jordan: How are the rules served?—Mr. Rogers: By post, with a circular describing the procedure to be adopted if any objection was desired to be lodged.—Mr. Jordan: Do you keep a post book?—Mr. Rogers: No; I do not serve the rules. They are served from the Home Office.—Mr. Jordan: Do you write to the Home Office for instructions? Is any record kept?—Mr. Rogers: I keep press copies of my requisitions.—Mr. Jordan said the present manager and secretary both instructed him that they had never received any notice of special rules. The manager had been there twelve months and the secretary three years, and the secretary (Mr. Hornby), was prepared to say that no copy of the special rules had ever been received.—Mr. Hornby: Yes, I have no recollection of any special rules being received.—Mr. Yates suggested that the case should be adjourned for proof.—Mr. Jordan: I think the rules ought to be proved.—Mr. Yates: Yes, I think so.—The further hearing of the case was adjourned for a fortnight.

ARNDT'S ECONOMETER.—We are pleased to note that the Elliott Cresson medal has been awarded to Herr Max Arndt of Aix-la-Chapelle, by the Franklin Institute, for the invention of his econometer which has been fully described in our earlier issues.

Selected Correspondence.

PATENT LAW REFORM.

(To the Editor of the Manchester Guardian.)

SIR,—It is to be hoped that the Chamber of Commerce in their interview with Mr. Ritchie on the patent question advocated the abolition of renewal fees, the official examination of patents for novelty by the Patent Office, and the extension of the lifetime of all patents to 21 years. If they have done this they will show that they have the good of the country at heart, since without it practical and mature invention can have little or no place with us, and we shall continue to lag behind America both in the quantity and quality of useful invention. It would be of great advantage to the public and to inventors if all patents were put on a royalty basis fixed by law, for anyone to use at a fair rental, half of which should be secured to the inventor by legal enactment. If capitalists object to so fair an arrangement, then let there be two classes of patents—one a hard monopoly for capitalists only, charged £99 cash down at the time of sealing, with a lifetime of 14 years, and one for inventors (who can pay no such sum) on the royalty basis, at £4. only, lasting for 21 years, by way of equivalent for throwing their patents open on rental. Had this been the case in 1896 (for which year we have figures), there would have been 241 patents of the former to 10,329 patented inventions of the latter class which were hopelessly wrecked for want of such provision of the law. The great bulk of patents are for mechanical inventions such as emanate from working men engineers. Over 100,000 of such patented inventions have been wrecked nine years under their proper lifetime since the passing of the Act, and there can be no question that the exasperation caused thereby is largely at the bottom of the unrest among engineers, resulting in the recent strike and lock-out. We must remember that we live in a school board age, and that the masses can read and study their own interests. Working men can now discriminate between what is equitable and what is grossly oppressive to their class. The patent law affects them deeply as a class-made law of the very worst type, and causes wholesale discontent. For these reasons I trust that the Chamber of Commerce in its recent interview with Mr. Ritchie spared no pains to get the patent law put upon an equitable, honest, and popular basis for the future.—Yours, etc.,

AN EXPERIENCED INVENTOR.

TECHNICAL SCHOOLS.

(To the Editor of the Birmingham Daily Post.)

SIR,—Are our Technical Schools efficient? To ask such a question now, when we have so recently witnessed the prize distribution by Sir J. Gorst, is, to say the least of it, rather surprising. According to the platform, our Technical Schools are for the gradual acquiring of scientific knowledge upon a thorough and sound basis. The public believe they are getting this, but if the internal organisation of the schools were thoroughly examined it would be found, instead of a gradual and thorough system of education, there was one unsound and harmful—a system which is simply rushing through a syllabus laid down by the Science and Art and other educational departments.

This syllabus, the teachers themselves admit, cannot be dealt with in a thorough and proper manner in the time. The result is that a student only obtains a smattering of the subject he or she has under consideration. This smattering is soon forgotten, for it has been gained by cramming, which everyone knows is an extremely unsound and injurious method of learning. We venture to say that this is one of the chief reasons why the classes decrease so considerably as the session progresses. Unless one has had a previous introduction to science at Bridge-street, or similar day schools (where there is a thorough and gradual system in operation), he or she is very soon left in the lurch. We are sure there are many who will bear our statements out, and trust that this letter will be the means of rectifying the present cramming system.

A TRIO OF STUDENTS.

Birmingham, Nov. 19th.

BEETROOT SUGAR.

(To the Editor of the Birmingham Daily Post.)

SIR,—With your permission, I should like to draw the attention of parties interested to the fact that I am distributing gratuitously sugar-beetroot seed for the growth of sugar-beetroot in the United Kingdom, and will analyse the roots and report thereon free. The consumption of sugar in the United Kingdom amounts to over one million tons per annum, representing a value of £19,000,000., which goes to the foreign exporter and which should remain in the United Kingdom. I have been closely connected with the experiments previously conducted in this country, and it was then proved that sugar beetroots can be grown here quite as well, if not better, than on the Continent, by such well-known landed proprietors as Lord Rosebery, Lord Winchelsea, and Lord Jersey. Great Britain, with its great consumption of 78lb. per

head per annum, should grow its own sugar, which would enable its large refineries now closed in London, Liverpool, Glasgow, Greenock, Bristol, Plymouth, Manchester, and Dublin to re-open again, and prevent the closing of factories now tottering.

SIGMUND STEIN.

323, Vauxhall-road, Liverpool, Nov. 20.

BEET-ROOT CULTIVATION.

A SPECIAL meeting of the Warwickshire Chamber of Agriculture was held on Saturday last to consider the question of: "The culture of beet for sugar in England, and the unfairness of the foreign bounty system as affecting the British agriculturist."—Mr. H. Donne presided, and the subject was introduced by Colonel Victor Milward, M.P., who said he should treat it as a non-political matter, and direct their attention mainly to the consideration of whether they could grow beet in this country. He would at once admit that the English grower could not contend successfully against a system of bounties, and that both farmers and sugar manufacturers must have security before they would embark their capital in the industry. The bounty amounted to 3s. 3d. per 212lb., or 16 per cent. upon the raw sugar; and there was no certainty that it would not be doubled in the face of English competition. Unless there was a clear statement that this sort of thing must come to an end, they could not expect English farmers or capitalists to enter upon the growth or manufacture of beet sugar. Apart from this the question was, could they grow sugar-beet in these islands? The farmers he had consulted one and all thought it could not be grown with sufficient saccharine matter to pay. There was nothing more remarkable than the growth in the consumption of beet-sugar in this country. In 1882 the proportion of cane sugar was 65 per cent. and beet sugar 35 per cent., whereas in 1896 only 25 per cent. of cane sugar was used and 75 per cent. of beet sugar; so that in 14 years cane sugar had fallen from 65 to 25 per cent., and beet sugar had risen from 35 to 75 per cent. There was therefore a prospect of cane sugar being driven out of the market unless something was done to alter the present system. On approaching the Minister of Agriculture for information, he was referred to Mr. Ernest Clarke, secretary to the Royal Agricultural Society, who in 1891 reported upon the culture of beet in Austro-Hungary, and who came to the conclusion that equally good-sugar beet could be grown in England as upon the Continent. On communicating with Mr. Clarke, he found that he still adhered to this opinion, but referred him for further information to the apostle of beet-sugar growing in England, Dr. Schack Somner. That authority wrote that England, Scotland, and Ireland were as well adapted to the culture of beet as any country in the world, and that if it were grown it would add materially to the national prosperity; but the uncertainty of bounties would, of course, prevent the people here engaging in this industry. The *Glasgow Herald* of Nov. 9th, published the experience of an Essex farmer who had, as an experiment, grown beet which yielded results quite equal to any foreign produce, both in regard to yield and saccharine matter. The experiments of Dr. Schack Somner, which were presented in tabulated form (many of which have been analysed in the *Journal*), established the same fact, with the additional proof of trials carried on for seven years in England, Scotland, and Ireland. The only instance of beet being grown on a large scale for manufacture in England was at Lavenham, in Suffolk, by Mr. Duncan, who gave evidence before the Royal Commission. These was said to be a failure for three reasons—first, because new methods of extracting sugar were said to have been adopted; secondly, it was alleged that the farmers did not supply sufficient beet, because they found other crops more profitable; and thirdly, because of the foreign bounty system. Beet had been tried on all kinds of soil in this country, and yielded good results except on the light sandy land. It was very necessary, however, to have the best kind of seed, and to follow a regular rotation of cropping. For three or four months of the year it required one man for every 10 or 15 acres, and the industry was therefore favourable to the employment of agricultural labourers. In Germany, the capital varied from £7,500. to £300,000. for each factory. In the present temper of Parliament and the public there were only three things that could be brought forward with any hope of legislation in the agricultural interest—viz., (1) a measure for altering the relations between landlord and tenant; (2) a bill to put down adulteration, though he did not think they would get as much relief as they hoped from this source; and (3) a bill to counteract the effect of foreign bounties, which would combine the support of those who had interests in the West Indies with the landowners, farmers, and labourers of this country. The question of whether beet was a suitable crop for English farmers could only be decided by a series of experiments, and with this view he should be happy to offer two prizes of £5. and £2. 10s. next year for the best samples of sugar-beet, and also to supply seeds for the trials. (Applause.)—Mr. Fairfax Lacy said that the Union of Conservative Associations, on the motion of Colonel Victor Milward, had passed a

for dealing with foreign sugar bounties, but they had a resolution in favour of giving encouragement to home-beet in order to provide an adequate supply in the event of could not understand this, as the arguments for supporting a national industry like wheat-growing were, of course, much than those for fostering a minor industry like beet-sugar. There did not seem any hope, therefore, of the country any plan for subsidising a beet-sugar industry at home. uling duties went further than commercial federation, they were punitive and prohibitive in their operation. f could only be transient in its effect, whilst it would add ost of living, and would amount to taking money e pocket of one class to give it to another.—Sir James ointed out that 17 tons of beet at 16s. per ton would only o £13 12s., which would leave very little margin of profit. e read of free trade the more was he convinced of the un- reviving any idea of protection in this country. That chapter mercial history was, in fact, irrevocably closed. That being ould certainly take care to purchase cane instead of beet rder to help the Colonies, and to get the best value of money. v. D. W. Sitwell said that even if they got a bounty to start ould not be continued, and they would then be left as badly e were in regard to wheat growing. If the country benefited y cheap sugar, that was all the more reason for being o the industries which were prejudicially affected by that. J. W. Lea, as a farmer, said that if they had to employ ten ery hundred acres, and to cultivate land to the depth of 15 e cost of beet growing in this country would be enormous. It e them much better to grow 30 tons of mangolds to the acre at 12s. n 17 tons of beet at 16s. per ton. —Col. Milward, in reply, said f growing beet was estimated at £7. 10s. per acre, and the tons at 19s. per acre, or £15. 4s.—Lord Leigh moved a e of thanks to Colonel Victor Milward for his address and l offer.—The Chairman seconded this, and a further motion arried that the Central Chamber be requested to discuss the f beet-sugar growing, with a view to a committee being collect and distribute information as to any experiments that rried out in this country.

THE NITRATE POSITION.

roducers of nitrate of soda have probably by this time realised in "breaking up" the combination (to use the official term) fallen from the frying-pan into the fire, adding yet another to list of their mistakes. Not in the ending of the "convenio," ery first condemned and derided by the *Pall Mall Gazette*, that organ, in the particular time chosen for the operation. l comes good, and at the eleventh hour the sacrifices made ve borne fruit but for the short-sightedness of the nitrate e we will proceed to show. For some time it had been known nnage available in Chili to the end of the year (that is, for arrive in Europe for the spring season) will not be sufficient ch of the full intended quantity, and that the ten per cent. so much talked about for market purposes would, therefore, e effected automatically. This circumstance, combined with al shutting down of bankrupt oficinas and continued restricted e survivors, would have allayed the fears of excessive nd have arrested the fall in selling prices. Instead of availing s of this ready-made path out of a *cul-de-sac*, the guiding e nitrate industry blindly rushed to the other extreme, broke convenio" on the flimsy pretence of the "Salar del Car- fusual to come in, and, burying their heads in the sand like s, they imagine that their professed intention to voluntarily duction will be taken on trust. Of course we are told that e of num-rous oficinas is keeping down the output of nitrate, e are mere drops out of the ocean against the bucketfuls poured e going concerns no longer under restriction, not to the new comers, hanging like wet blankets over the e. The result is that nitrate is being freely offered d. per quintal f.o.b., and as stocks on the coast reach nageable total of 8,000,000 of quintals, the chances are ders will have to accept lower prices who wish to get out e deluge of nitrate culminates early next year on the advent at "Alianza" works. Some of the English companies, lack- oral courage to face the music (of their own making), and o steal a march on the coast producers, are shipping on own e high freights, but these consignments are as likely as not to e the same fate as their predecessors of late years, for the position of nitrate is, as our neighbours across the Channel, "impossible." Taking as a starting point the Permanent ommittee's figures, and eschewing odious comparisons, we

	Tons.
Visible supply for Europe, November 1, 1897	501,720
Shipments, November-December (estimated)	230,000
	731,720
Deliveries, November-December (official)	73,700
Visible supply, December 31, 1897	658,020
January-February steamers and early January sailers (estimated)	80,000
	738,020
Deliveries, January-April, same as in 1897 (official)	562,990
Surplus in Europe, May 1, 1898	175,030

Whichever way they are looked at these figures prove beyond the shadow of a doubt that the prospective supply of nitrate for the coming season is largely in excess of every possible demand. With regard to the consumption great hopes are founded on the present low price of nitrate compared with other fertilizers, as also on the improved agricultural position in cereals, but, on the other hand, sugar-beet culture has, according to the highest authorities, reached its zenith, and an increased outlet is hardly to be expected in that direction. Nitrate of soda, although undoubtedly the most active and deservedly the most popular of manures, has its limitations, not the least of which is the circumstance that its agricultural use practically extends over only four months of the year. Without entering into further statistical details, or laying stress on the certainty of heavy shipments next year as soon as tonnage has accumulated on the coast, it may safely be asserted that consumers will be able once more to supply their requirements on very favourable terms. Cargoes for spring arrival are firmly held at £7. 10s. to £7 12s. 6d. per ton, solely on account of the rapid rise in freights to 30s., but the 350,000 tons now on passage do not on an average pay more than 25s., and, moreover, the full pressure of the enormous unsold stocks in Chili has not yet been felt. As was said in the *Pall Mall Gazette* at the time of the collapse of the combination, some fresh arrangement will have to be arrived at by the nitrate producers to prevent an indefinite protraction of the present hideous state of the industry. The difficulty is to bring together on equitable terms private producers such as Messrs. Fölsch, Granja, Perfetti, and others able to do well with nitrate even at 4s. 9d. f.o.b., and companies like Lagunas, Rosario, and Lautaro, hopelessly handicapped at that figure by excessive capital and heavy London charges. Negotiations will be opened sooner or later, and meantime the producers, through their organs in the press, are appealing, *in forma pauperis*, to the Chilean Government for a reduction of the export duty, with about as much chance as have nitrate shareholders of receiving dividends next year. Interest in "Nitrates" has almost reached the vanishing point, but as many millions of British capital are invested therein, and as the *Pall Mall Gazette* has made a specialty of the subject, they may take an early opportunity of reviewing the position of the leading companies.

ALKALI MANUFACTURE IN AMERICA.

THE Detroit newspapers state that Dr. Ferdinand Hurter, chief chemist of the United Alkali Company, of England; Edward J. Duff, engineer to the company, and E. P. Floyd-Jones, representative of the American agents, were in the district recently prospecting upon the erection of a soda ash factory at Ecorse, where the company owns 100 acres of land. They propose to erect a factory with a capacity of 500 tons a week. Plants for the manufacture of hydrochloric acid, chloride of lime, chlorate of potash, bicarbonate of soda, and caustic soda are contemplated. The Le Blanc system is to be employed.

The visiting officers and experts are said to have made a careful examination of freight rates, cost of labour and materials, the location of the limestone quarries, and the quality of brine drawn from their test well in Ecorse.

Members of the County Board of Supervisors met the representatives of the company during their stay at Detroit and explained the method of taxation in Michigan.

Speaking of the conference afterwards one of the supervisors said:—"They seemed to be satisfied with the explanation that we gave them, but so far as I could learn these representatives of the British company are only travelling about the country and investigating localities that are supposed to be favourable for the location of salt plants. They are looking after the price of machinery and the cost of plants. They did not seem to know when the United Alkali Company would be ready to build, either in Ecorse or anywhere else either this year or in several years to come. However, the Supervisors' Committee explained as best it could the methods in vogue in the State, and tried to encourage them to locate in Ecorse township."

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols are depressed, 90's now being quoted 1s. 9½d. to 1s. 10d., and 50/90's 2s. Crude carbolic acid is quiet, and price nominal. Crystals are the turn dealer at 7d. Naphthas are much the same as last quoted, solvent perhaps being a trifle easier at 1s. 7½d. to 1s. 8d. Anthracene dull. Creosote firm. Pitch is not encouraging at 17s. to 20s. 6d. f.o.b. East Coast.

Sulphate of ammonia is quieter, and prices are slightly easier. Makers are firm in their requirements for forward, although business is rather slow. Closing prompt values are:—Beckton, £8. 17s. 6d.; London outside makes, £8. 17s. 6d.; Liverpool, £9.; Hull, £8. 17s. 6d., and Leith, £8. 17s. 6d. to £8. 18s. 9d.

MISCELLANEOUS CHEMICAL MARKET.

Business during the past week has been quiet, and there are no changes in prices to call for special comment. Bleaching powder continues to be offered at very low rates, but we expect to see an improvement before long. Caustic soda somewhat slow of sale at £7. for 70%, and £6. for 60%, rails makers' works. Soda ash of all grades quiet and unchanged. Chlorates of potash and soda steady, and prices are: Potash 3¼d. per lb., and soda 4½d. per lb. Saltcake dull at 18s. per ton. Lead salts all round are fairly strong, but there is no large amount of business passing. Acetate of soda has moderate inquiry, and Friday's value was £12. 10s. per ton, c.i.f. Sulphate of copper more satisfactory at £16. 5s. per ton f.o.b. White powdered arsenic continues steady at £21. 15s. f.o.r. Garston. Acetate of lime advanced; we quote grey £8. 10s.; brown £5. 15s. Muriate of ammonia sells slowly, and prices are consequently low; grey is worth £18.; white £21. Sal ammoniac 33s. and 31s. respectively. Carbolic acids are well maintained; crude 60's is quoted at 2s. Crystals 39/40 7d. per lb. Oxalic acid 3½d. per lb. The demand for textile chemicals is below the average.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron quiet: Scotch warrants closed at 45s. 1d.; Middlesbro', 40s. 8½d. cash; and hematite, 47s. 10½d. Copper quiet: Chili bars, G.O.B.'s and G.M.B.'s, closed at £48. 2s. 6d. to £48. 7s. 6d. cash, and £48. 10s. to £48. 15s. three months. Tin easy: Straits closed at £62. 13s. 9d. to £63. 3s. 9d. cash, and £63. 5s. to £63. 15s. three months; Australian, £63. 7s. 6d.; English ingots, £66. 5s. to £66. 10s. Lead firm: Spanish, £13. 3s. 9d.; English, £13. 7s. 6d.; Silesian spelter, ordinary, £18. 1s. 3d. Nickel, 1s. 2½d. Antimony, £29 5s. Quicksilver: First hands, £7.; second hands, £6. 19s. Copper shares quiet: Cape, 3¼ to 3½; Copiapo, 1¾ to 2½; Libiola, 2½ to 2¾; Mason and Barry, 2¼ to 2½; Rio Tinto, 24¾ to 24½; Tharsis, 6¼ to 6½.

GLASGOW, WEDNESDAY.—Market steady, and a fair business. Scotch done at 45s. 0½d. to 45s. 1d. cash, and 44s. 3½d. one month; buyers, 45s. 1d. cash; sellers, ½d. more. Cleveland done at 40s. 8½d. cash, and 41s. to 40s. 11d. one month; buyers, 40s. 8½d. cash; sellers, 40s. 9d. Cumberland hematite done at 48s. one month; buyers, 47s. 9½d. cash; sellers, 1d. higher. Middlesbrough hematite, buyers, 48s. 9½d. cash; sellers, 48s. 11d.

REPORT ON MANURE MATERIAL.

There has been a steady market, and a fair amount of business has been done. There is a healthy demand for mineral phosphates, both for Continent and United Kingdom, and the tendency of prices is to advance. For 1898 steamer shipment in cargoes to good U.K. ports, 6½d. per unit is now asked for 75/80% Florida rock, but 6d. would probably be accepted if bid, unless for summer shipment. There are still sellers of South Carolina River rock at 5¼d. per unit, and the same price is quoted for similar grade Algerian.

In the absence of cargoes offering, the nearest value of River Plate bones is probably £3. 16s. 3d. per ton. For East India bone meal, £4. 5s. is now asked for December-January steamer shipment, and even more money would have to be paid for crushed Kurrachee bones. Common grinding bones are worth £3. 12s. 6d. to £3. 15s. per ton, according to quality and condition. Nitrate of soda is firm at 7s. 6d. per cwt. for good, up to 7s. 9d. per cwt. for fine quality.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is firm, but quiet, there only being a small business doing. Benin reported done at £18. Olive is steady, but in limited request. Linseed quiet, Liverpool makes in export casks being offered at 15s. 9d. to 16s. cwt. Cottonseed easy and quiet at 14s. 9d. to 15s. 6d. cwt. for Liverpool refined. Castor oil is moving fairly well, with good seconds Calcutta at 3½d. to 3¾d., and first pressure French 3¾d. per lb. Tallow firm and in good demand. Resin steady in price, but rather slow of sale. Spirits of turpentine firm at 24s. 6d. cwt., and fairly well inquired for. Petroleum dull, and values practically nominal at 5¾d. to 7d. for American, and 5d. per gallon for Russian refined.

CAKES.—The firm tone in linseed has continued, both American Western on the spot and Liverpool makes being active at £6. 17s. 6d. to £7., and £7. 15s. to £8. 5s. per ton respectively. Good to choice brands of American decorticated cottonseed have ruled rather slow of sale, and the quotation is barely maintained, £5. 10s. to £6. being sellers' price. Liverpool makes continue very steady, with a fair inquiry at £6. 5s. to £6. 15s. per ton. Undecorticated Liverpool makes have met a good consumptive inquiry, and holders ask £4. 2s. 6d. to £4. 10s., according to brand. Short supplies of Egyptian on the spot have kept price at £4. 2s. 6d. per ton.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire—common £10., medium £12., best £15.; Derbyshire—common 40s., medium 50s., best 60s.; Welsh—best 90s., seconds 50s., and common 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead: £16. Red lead unchanged. Venetian red: £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide: £22. 10s. to £25.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—Business here shows but little alteration. The question on the tapis is the renewed application to Parliament of the N.E.K. Co.'s dock extension scheme which yesterday received the support of the seed, oil, and cake trade, who imported into Hull last year over two millions of quarters of oil seeds. The imports to date have been:—Linseed, 629,796 qrs. against 823,645 qrs. last year; rapeseed, 79,589 qrs. against 78,640 qrs.; oilcakes, 9,139 tons against 11,361 tons; olive oil, 4,201 tons against 5,363 tons; tar, 14,593 brls. against 18,156 brls. Linseed oil has not maintained its value, having relapsed about 7s. 6d. per ton, and closes dull at 13s. 10½d. per cwt., spot naked; Dec., 14s.; Jan.-April, 14s. 6d., and May-Aug., 14s. 9d. sellers. Boiled and refined, £1. to £1. 10s. per ton extra. Refined cottonseed oil quiet sellers at 12s. 7½d.; Dec.-April, 12s. 9d. sellers. Filtered oil is about £1. per ton extra; casks £1. and barrels £1. 10s. per ton extra. Resins are quoted from 5s. 3d. to arrive. Spirits of turpentine unchanged. Oleines from £16. 15s. to £20 for white re-distilled. Olive oil quiet and unchanged. Cod oils, £16. to £18. per ton. Olive oil soap (Italian), £16. 0s. per ton, c.i.f. Hull. Stockholm tar promises to be very high in price owing to scarcity, and is quoted 24s. per barrel. Castor oil, from 3½d. per lb. Arachide nut oil, £28 15s. Cakes still maintain a firm market; the same with all feeding stuffs. Linseed cakes are very firm, 95% pure quoted £7. 17s. 6d. to £8. per ton. Oil cakes (Linseed), £6. 17s. 6d. to £7.; Russians, £7. 7s. 6d. to £7. 12s. 6d. Americans, £7. 2s. 6d. this month's delivery. Cotton cakes steady: best makes, £4. 3s. 9d. to £4. 5s.; seconds, £4. 1s. 3d. to £4. 2s. 6d. Rape cakes, £4 12s. 6d. for Black Sea.

PAINTS.—The demand is exceptionally dull, orders difficult to get at any price. White and red leads continue firm at the advance. Ordinary colours in oil from £9 per ton. Paint remover, 25s. Ultramarines from 2½d. per lb. Lime blues from £12. Black varnish from £5. per ton. Oak varnish from 5s. per gallon.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Sulphate of ammonia holds all its firmness, and up to now has succeeded in keeping steadily to the rise, despite the manifest disinclination of the buying side. For prompt £9. Leith, or possibly a fraction more, has had to be paid. Makers are now asking as high as £10. on the forward account, but buyers' offers are still very considerably short of that, and there has been no business of that sort doing. Mineral oils and paraffins are in rather active deliveries, without any change of price, except in the case of paraffin spirit (naphtha) which is firmer and fetching 7d. per gallon readily. In general chemicals, there are hardly any shifts in prices, but soda crystals, soda ash, and sulphur are all rather scarce. Possibly, chlorate of potash may be a shade weaker. Shipments to the ice ports are drawing to a close.

Chief prices current are:—Soda crystals, £2. 10s. to £2. 17s. 6d. nett, Tyne, soda ash, 48/62°, £4. 2s. 6d. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £4. 17s. 6d. to £5. 7s. 6d. nett, Glasgow; caustic soda, white, 74° £8. 2s. 6d., 70/72° £7. 7s. 6d., 60/62° £6. 7s. 6d., cream 60/62° £6. 2s. 6d. all nett, Liverpool; bleaching powder, 35/37°, £6. 5s. nett, Tyne; saltcake, 19s.; borax, English, refined, £15., and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4d. nett, for Scotch and English deliveries (for export, 3 3/4 d. nett, f.o.b. Glasgow); bichromate of soda, 3 3/4 d. nett, for Scotch and English deliveries (for export, 3d. nett, f.o.b. Glasgow); chlorate of potash, 3 3/4 d. less 5%, any port; nitrate of soda, 7s. 6d. to 7s. 9d.; sulphate of ammonia, £9. to £9. 1s. 3d. prompt, f.o.b. Leith; salamoniac, first and second white, £33 and £31. nett any port; sulphate of copper, £16. 5s. less 5% Liverpool; paraffin scale, hard, 1 3/4 d. to 1 1/2 d. per lb., soft, 1 1/2 d. per lb.; paraffin wax, 120° semi-refined, 1 3/4 d. to 2d. per lb.; paraffin spirit (naphtha), 7d. per gallon; paraffin oil (burning), No. 1, 5 3/4 d., and crystal, 6d., at Glasgow and other big centres, for Scotch buyers (English sales a shade lower); ditto (lubricating) 865° £4. 15s. to £5. 5s., 885° £5. 15s. to £6. 5s., and 890/895° £6. 10s. to £7. Week's imports of sugar at Greenock were 13,550 bags beet unrefined.

TYNE CHEMICAL REPORT.

TUESDAY.

There is no change to report. Market is very quiet, and prices are practically unaltered. Soda crystals are quoted £2 12s. 6d. per ton, gross weight, locally. Bleaching powder £6 5s. to £6. 10s. per ton. Caustic 76/77° £9. per ton. Sulphur scarce at £5. per ton.

Bleaching powder, soft, £6. 5s. per ton, nett; hards, £6. 10s. per ton, nett; caustic soda, 76/77° £9. and 70° £7. 10s. per ton, nett; recovered sulphur, 2 cwt. bags, £5. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. 6d. per ton, nett; do., 52%, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95% crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham Salt is firm at 9s. to 9s. 3d. per ton, f.o.b. Tees.

COALS.—Trade still continues good and prices are maintained. Bunker coals are in rather better demand, and gas coals increasing in consumption. Household coals are steady, with a good demand for home and export. Coke firm at 19s. to 21s. per ton. Best Northumbrian steam, 8s. 6d. to 8s. 9d. per ton; second qualities, 7s. 6d. to 7s. 9d. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; bunker coals, 7s. 9d. to 8s. 3d. per ton; gas coals 8s. 6d. to 8s. 3d. per ton; household coals, 10s. to 11s. per ton; coke, 19s. to 21s. per ton.

New Companies.

A. Barraclough & Co., Ltd.—CAPITAL £5,000. in £1. shares (2,500 £6% cum. pref.). This company has been formed to acquire the business carried on as "A. Barraclough & Co.," and to carry on the business of lead merchants, lead pipe manufacturers, plumbers, lead and iron workers, etc. The number of directors is not to be less than

2 nor more than 5. Qualification £250. Registered office, Eureka Lead Works, Beck Lane, Heckmondwike, Yorks.

W. & J. George, Ltd.—CAPITAL £10,000. in £5. shares. This company has been formed to acquire and carry on the business of chemical and physical apparatus manufacturers and dealers in pure chemicals carried on by W. J. George and A. J. George, at 33 and 36, Cambridge-street, Birmingham, and 33, 35, and 37, Hatton Wall, London, as "W. J. George," and to adopt a certain agreement. The subscribers to the memorandum of association are:—W. J. George, 36, Cambridge-street, Birmingham; A. J. George, 36, Cambridge-street, Birmingham; W. D. George, Gas-street, Birmingham; Mrs. A. George, 105, Gough-road, Birmingham; Miss G. H. George, 105, Gough-road, Birmingham; F. A. George, 105, Gough-road, Birmingham; G. A. Nutt, Prudential Buildings, Birmingham, solicitor. Registered office, 36, Cambridge-street, Birmingham.

Liver Galvanising Co., Ltd.—CAPITAL £5,000. in £1. shares. This company has been formed to acquire the business carried on at 68, Rathbone-street, Liverpool, as "The Liver Galvanising Co.," and to carry on the business of galvanised and corrugated iron makers, iron merchants, engineers, etc. The number of directors is not to be less than 3 nor more than 5.

Otto-Freez Toilet Soap Co., Ltd.—CAPITAL £5,000. in £1. shares. This company has been formed to acquire and carry on the business of perfume, lotion, and soap manufacturers, carried on at 66, High-street, Camden Town, N.W., as "The Otto-Freez Co." The number of directors is not to be less than 2 nor more than 7; the subscribers are to appoint the first. Qualification £1.; remuneration, 10s. each per board meeting attended.

Manchester Malt Vinegar Co., Ltd.—CAPITAL £5,000. in £10. shares. This company has been formed to carry on the business of vinegar makers, sauce and pickle manufacturers, condiment manufacturers, etc. Table A. mainly applies. Registered office, Wellington Brewery, Wellington-street, Bradford, Manchester.

W. C. Barnes & Co., Ltd.—CAPITAL £60,000. in £10. shares. This company has been formed to adopt an agreement with W. A. Mitchell, H. J. Barnes, and R. L. Barnes, and to carry on the business of chemical manufacturers and merchants, chemists, druggists, dyers, salters, oil and colourmen, etc. The subscribers to the memorandum of association are:—W. A. Mitchell, Phoenix Chemical Works, Hackney Wick, chemical manufacturer; H. J. Barnes, Phoenix Chemical Works, Hackney Wick, chemist; R. L. Barnes, Phoenix Chemical Works, Hackney Wick, chemist; H. T. G. Garmyn, 35, Eastcheap, E.C., chartered accountant; A. B. Mitchell, Dames Hill, Bengoe, Herts, chemist; J. Prichard, 44a, Portland Place North, Clapham-road, S.W., gentleman; A. S. Way, 24, Edale-road, Rotherhithe, clerk.

Iron Pigment and Precipitant Co., Ltd.—CAPITAL £10,000. in £1. shares. This company has been formed to acquire all patent rights granted to Norman McCulloch, F.I.C., Glasgow, in respect to an invention for a method of oxidising protoxides of iron, and to carry on business as chemical manufacturers. The subscribers to the memorandum of association are:—J. Robertson, Lauchrope, Holytown, landowner; G. S. Loudon, Newmains, Lanarkshire, coal and iron master; M. McCulloch, 9, W. Princes-street, Glasgow, coal master; J. Robertson, 82, W. Nile-street, Glasgow, writer; N. McCulloch, 9, W. Princes-street, Glasgow, chemist; A. Smith, Parkleven, Kilmacoll, Glasgow, drysalter; J. Fairie, 82, W. Nile-street, Glasgow, chartered accountant. Registered office, 82, W. Nile-street, Glasgow.

Gazette Notices.

PARTNERSHIP DISSOLVED.

E. TAPPLY, E. R. COOK, H. J. COOK, W. COOK, S. HALL, and T. A. COOK export soap, starch, and candle manufacturers, Lime-street, London, E.C. under the style of Edward Beach and Co.; so far as regards E. Tapply.

BANKRUPTCY ACTS, 1883 and 1890.

Adjudication.

HUGO NEUWIRTH, Mark-lane, E.C., and Ellesmere Villas, Ethelbert-road, Wimbledon, S.W., late Connaught Mansions, Coldharbour-lane, Brixton, S.W. and Sandmere-road, Clapham, S.W., member of the firm of Harrison and Neuwirth, engineers, machinery agents, and general merchants.

IMPORTS OF CHEMICAL PRODUCTS

AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending November 13th.

Acetic Acid—

Holland, 100 pks. R. W. Greeff & Co.
" 8 Little & Johns' on
" 20 H. Wallace & Co.

Acetone—

France, 13 drs. R. D. Lyon
Alkali—
Belgium, 105 c. J. Harrison
Holland, 40 Little & Johnston

France, 80

Antimony Ore—

Germany, 16 t. T. Merry & Sons

Arsenic—

Portugal, 60 brls. Coverley & Westray

J. Barber & Co.

Arsenic Ore—

Adelaide, 462 pks. Davies, Jones & Co.

Asbestos—

Canada, £230 W. Byford
Germany, 40 Craven & Co.

Barium Chloride—

Germany,	22 cks.	Petri Brs.
Barytes—		
Belgium,	93 cks.	Taylor Brs.
"	118 353 pks.	J. L. Lyon & Co.
"	87	O'Hara & Hoar
Holland,	50	J. L. Lyon & Co.
"	38	Wilkinson, Heywood & Co.
"	24	Ldn. & Bham. Cil Cryg. Co.
Belgium,	100 bgs.	W. Harrison & Co.

Benzol—

Holland,	11 drs.	Blagden, Waugh & Co.
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Bleaching Powder—

Germany,	140 c.	H. Lambert
Holland,	55 cks.	J. M. Steel & Co.

Camphor—

Germany,	68 tubs	Hale & Son
"	68	S. Figgis & Co.

Caoutchouc—

U. States,	135 c.	Prop. Bull Wf.
Thursday Is.,	2 c.	L. & I. D. Jt. Co.
H. Kong,	110	Prop. Bull Wf.
Holland,	5	Phillips & Graves
"	22	"
Germany,	53	L. & I. D. Jt. Co.
Zanzibar,	73	Hale & Son
"	65	S. Figgis & Co.
"	63	Wallace Brs.
"	15	"
Germany,	40	Clarke & Smith
Zanzibar,	4	Forbes, Forbes & Co.
"	56	P. Heydemann
Singapore,	120	G. D. Jennings & Co.
E. Indies,	3	"

Carbolic Acid—

Holland,	1 pk.	G. Rahn & Co.
Germany,	50	Blagden, Waugh & Co.

Castor Oil—

France,	3 brls.	City Coml. Wf. Co. Ld.
Italy,	20 cs.	A. & M. Zimmermann

Chemicals (otherwise undescribed)

U. States,	£146	Lunham & Moore
Germany,	30	T. H. Lee
"	300	L. & I. D. Jt. Co.
"	734	A. & M. Zimmermann
"	100	H. Lambert
France,	132	J. W. Cook & Co.
Belgium,	160	L. & I. D. Jt. Co.
"	19	John Cockerill Line
Holland,	36	Phillips & Graves
Belgium,	170	T. H. Lee
Germany,	40	T. Palmer

Copper Sulphate—

U. States,	65 brls.	J. Owen
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Cream of Tartar—

Italy,	16 cks.	Thames S. T. & L. Co., Ld.
"	8	A. E. Piggott
"	42	Howard & Sons
France,	2	H. Johnson & Sons
"	10	B. & F. Wf. Co.
"	10	C. F. Gerhardt

Dextrine—

Germany,	10 bgs.	H. Lambert
"	100	M. D. Co.
"	81 pks.	Prunk, Davis & Co.

Dyestuffs—

Aniline		
Belgium,	24 pks.	W. Gerson & Co.
Argols		
Italy,	500 bgs.	Thames S. T. & L. Co.

Cochineal

Canaries,	6 bgs.	W. M. Smith & Sons
"	28	Hendrey & Martin
"	8	Kuhner & Henderson

Cutch

U. States,	50 bxs.	Ralli Brs.
Rangoon,	2,340	A. B. Curtis & Co.

Extracts

Austria,	200 cks.	100 bls. Boucher, Mortimore & Co.
Germany,	200 bgs.	Fuerst Brs.
"	21 cks.	T. H. Lee
U. States,	100 bxs.	Skilbeck Brs.
France,	64 cks.	J. Harrison
Denmark,	2	M. D. Co.
U. States,	1 cs.	Bailey & Leetham, Ld.
"	10 kgs.	R. Davies & Co.

Fustic

B. W. I.,	9 kds.	J. Hales Caird & Co.
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Gambler

Singapore,	492 bls.	J. W. Cook & Co.
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Indigo

Austria,	8 cts.	Kleinwort, Sons & Co.
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Myrabolams

E. Indies,	140 bgs.	Baxter & Hoare
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Naphthaline

Germany,	39 cks.	Fleming's Oil & Chemical Co.
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Nitro Naphthaline

Germany,	18 cks.	Forbes, Abbott & Co.
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Saffron

Spain,	2 cs.	Nich's Wvs., Ld.
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Shumac

Italy,	1,000 bgs.	J. Kitchen
"	800	Bevington & Sons
"	500	C. S. Lovell

Tanners' Bark

Natal,	4 t.	Flack, Chandler & Co.
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Dyestuffs (otherwise unascertained)

A. Turkey,	12 bgs.	S. Homsy & Co.
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Farina—

Holland,	50 bgs.	J. Knill & Co.
Germany,	100	T. H. Lee
"	100	Hernu, Peron & Co.

Gambog—

China	11 cs.	A. Runge & Co.
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Glucose—

Germany,	35 pks	235 c. Deering & Robottom
U. States,	272	1,590 R. G. Hall & Co.
Germany,	24	204 Bennett S. Co.
U. States,	50	300 Page, Son & East
"	100	600 C. Southwell & Co.
"	50	300 Deering & Robottom
"	339	1,903 W. Grose & Co.
France,	209	200 L. Norman & Co.

Glue—

France,	£90	B. & F. Wf. Co.
Germany,	16	Phillips & Graves
France,	75	T. M. Dache & Sons
U. States,	40	W. J. Davies & Sons
Germany,	30	L. & I. D. Jt. Co.
Holland,	35	G. Rahn & Co.
U. States,	25	Armour & Co.
Belgium,	208	J. Barbier & Co.
Germany,	500	Deering & Robottom

Infusorial Earth—

Germany,	50 t.	A. Haacke & Co.
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Lamp Black—

U. States,	100 cs.	L. & I. D. Jt. Co.
"	200 brls.	M. Ashby, Ltd.

Magnesia—

Belgium,	350 bgs.	W. D. Stewart
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Manganese Ore—

Germany,	5 t.	L. & I. D. Jt. Co.
"	11	Soundy & Sons

Manure—

Arg. Rep.,	12 t.	F. Kaye & Co.
Germany,	450	F. W. Berk & Co., Ltd.
E. Indies,	300	A. Hunter & Co.
"	250	Union L. Co., Ltd.
Belgium,	50	J. G. Back
"	40	D. de Pass & Co.
Rosario,	200	L. & I. D. Jt. Co.
River Plate,	200	Liebig's Ext. Meat Co.

Methyl Alcohol—

Belgium,	18 dms.	Lister & Biggs
Holland,	8	A. H. Charles

Mica—

E. Indies,	£1150	W. M. Smith & Sons
China,	180	L. & I. D. Jt. Co.

Molasses—

B. W. I.,	195 pks.	2,200 c. Hett & Field
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Ochre—

Holland,	27 pks.	Phillips & Graves
Germany,	15	J. Kitchen, Ltd.
France,	7 cks.	O'Hara & Hoar
"	27	J. L. Lyon & Co.

Oxalic Acid—

Norway,	10 pks.	S. C. D. Co.
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Phosphate Rock—

Algiers,	1,630 t.	Anglo-Contl. Guano Works
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Belgium,

Belgium,	95	Weekes, Phillips & Co.
"	215	Lawes Chemical Manure Co.

Pitch—

N. Russia,	38 brls.	Bailey & Leetham
Germany,	24 bgs.	Poth, Hille, & Co.
N. Russia,	38 brls.	M. D. Co.
"	400	Fellows, Morton, & Co.
Belgium,	75	H. Hunt

Plumbago—

U. States,	11 cs.	Lunham & Moore
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Potassium Bicarbonate—

Holland,	17 cks.	A. & M. Zimmaer-mann
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Potassium Carbonate—

Germany,	220 c.	Petri Brs.
Belgium,	500	H. Wallace & Co.
Germany,	100	R. W. Greeff & Co.

Potassium Chlorate—

Belgium,	16 kgs.	J. W. Drysdale & Co.
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Potassium Permanganate—

Holland,	40 kgs.	R. W. Greeff & Co.
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Pumice Stone—

Italy,	5 t.	H. Johnson & Sons
"	4	W. J. Davies & Sons
"	20	J. F. Power

Rosin—

France,	20 brls.	Lucas & Spencer's Wf.
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Saltpetre—

Germany,	100 cks.	Lucas & Spencer's Wf.
"	12	L. & I. D. Jt. Co.

Sodium Prussiate—

Belgium,	40 cks.	Blagden, Waugh, & Co.
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Starch—

Belgium,	318 cs.	J. Harrison
U. States,	360	C. Tennant, Sons, & Co.
Holland,	1,388	Little & Johnston
Germany,	200	L. & I. D. Jt. Co.
Holland,	1,400	A. Starck
"	130	Phillips & Graves
France,	200	J. Barber & Co.
Belgium,	170	F. Claydon & Co.
"	100	T. H. Lee
"	110	Seaward Brs.
"	460	E. & T. Pink
Germany,	420	Horne & Co.

Stearine—

Belgium,	4 pks.	John Cockerill
"	6 bks.	Line
"	250 bgs.	H. Hill & Sons

Sulphur—

Italy,	5 t.	Taylor Brs.
"	18	J. Kitchen, Ltd.
"	20	G. Boor & Co.
"	130	Andersen, Becker, & Co.

Tar—

N. Russia,	1,566 brls.	Linck, Moeller, & Co.
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Tartaric Acid—

Holland,	27 pks.	Kirkpatrick & Co.
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Ultramarine—

Holland,	86 pks.	G. Rahn & Co.
Germany,	25 cks.	T. Hamilton & Co.
Belgium,	30	Leach & Co.
Holland,	2	Haefner, Hilpert, & Co.
"	11 pks.	"

Varnish—

U. States,	3 pks.	L. & I. D. Jt. Co.
"	6	Dawson Brs.
Germany,	35	T. H. Lee
Belgium,	1	"
France,	3	Mory & Co.

Verdigris—

France,	6 cks.	B. & F. Wf. Co.
"	4	C. F. Gerhardt

Waste Salt—

Germany,	250 bgs.	Kugreiff & Co.
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White Lead—

Germany,	40 cks.	F. G. Clifford
"	57	Randall Brs.
Belgium,	100	W. Hampton
France,	17	Soundy & Sons
Germany,	26 brls.	H. B. Alder & Co.
"	40 cks.	D. Storer & Sons
"	39	Wilkinson, Heywood, & Co.
Belgium,	95	T. & W. Farmiloe, Ltd.

Wood Pulp—

Germany,	500 pks.	Christophersen, Andrews, & Co.
Sweden	272	C. S. Lovell
Norway,	652	W. G. Taylor & Co.
Holland,	967	E. J. & W. Goldsmith
U. States,	294	Henderson & Davis
Portugal,	430	W. G. Taylor & Co.
Norway,	400	Grey's Paper Mill Co.
Norway,	4,210	London Paper Mill Co.

Zinc Oxide—

Holland,	40 brls.	M. Ashby, Ltd.
Belgium,	5	"

LIVERPOOL.

Week ending November 27th.

Acetate of Lime—

New York,	2,527 bgs.	
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Acetic Acid—

Dunkirk	27 balloons	
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Albumen—

Alexandretta,	6 cs.	
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Arsenic—

Antwerp,	95 cks.	
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Barytes—

Dunkirk,	31 cks.	
Rotterdam,	67 bgs.	

Bone Ash—

San Nicolas,	94 bgs.	
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Bone Meal—

Karachi,	1,738 bgs.	
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Boracic Acid—

Genoa,	1 brl.	
Leghorn,	5 cks.	

Paraffin Scale — New York, 597 brls. 150 cs. Anglo-American Oil Co., Ltd.	
Phosphate — Bona, 2,140 t. Dunkirk, 300 bgs.	
Phosphate Rock — Pl. Royal, 1,000 t.	
Pitch — Marseilles, 50 brls.	
Potash — Bremen, 1 ct. Rouen, 57 Co-op. W'sale Society, Ltd.	
Dunkirk, 80 dms. Hamburg, 40 cks.	
Pyrites — Huelva, 1,901 t. Matheson & Co. Leghorn, 1 sk. F. Tallach & Son	
Rosin — Bayonne, 30 cks. R. J. Francis & Co.	
Salt — Calcutta, 2 bgs.	
Saltpetre — Karachi, 219 bgs.	
Soap — Marseilles, 50 bxs. 42 cs. New York, 100 bxs. 63 crts. Hamburg, 30 bls. Naples, 314 cs. Newport News, 100 bbls. Alexandretta, 2 cs. Philadelphia, 2 G. Greiner & Co.	
Soapstone — Bordeaux, 300 bgs. Geo. G. Blackwell, Sons & Co.	
Sodium Acetate — Rouen, 54 cks. Co-op. W'sale Society, Ltd.	
Sodium Bichromate — Hamburg, 25 cks.	
Sodium Silicate — Dunkirk, 2 cks.	
Starch — Hamburg, 17 cks. New York, 800 bgs. T. M. Duche & Sons Antwerp, 102 cs. J. T. Fletcher & Co.	
Stearine — Antwerp, 26 bgs.	
Sulphur — Catania, 280 bgs. 34 cks. 87 brls.	
Tallow — Bowen, 265 cks. 19 puns. San Nicolas, 200 New York, 100 hds.	
Tartaric Acid — Marseilles, 36 brls. Genoa, 1	
Treacle — Philadelphia, 100 brls.	
Ultramarine — Rotterdam, 20 cks.	
Verdigris — Marseilles, 1 brl. Bordeaux, 7 cks.	
Waste Salt — Hamburg, 70 t. 152 bgs.	
White Lead — Dunkirk, 33 cs.	
Wood Pulp — Boston, 138 bls. Christiania, 525 W. Hames	
Zinc Oxide — New York, 50 brls. Antwerp, 22 44 cks.	
Zinc White — Dunkirk, 12 cks.	

MANCHESTER.

Week ending November 13th.

Alizarine — Rotterdam, 36 cks.	
Aniline Salts — Rotterdam, 5 cs.	
Antimony Oxide — Hamburg, 1 ct.	
Asphaltum — Hamburg, 32 brls.	
Chemicals (otherwise undescribed) Rouen, 30 cks.	

Colours — Rotterdam, 102 cks. 9 cs. 43 pks. 4 bxs.	
Farina — Hamburg, 937 bgs. Rotterdam, 1,526 Stettin, 1,000 N. M. Jackson 150 Stott, Coker, & Co.	
Glue — Hamburg, 100 bls. Antwerp, 19 Rouen, 18 cks. 5	
Lead Acetate — Stettin, 15 cks. Stott, Coker, & Co.	
Hamburg, 8	
Limestone — Antwerp, 4 crts. J. T. Fletcher & Co.	
Ghent, 8	
Litharge — Rotterdam, 22 cks.	
Ochre — Rouen, 20 cks.	
Phosphate — Rotterdam, 11 cks.	
Potash — Hamburg, 78 cks.	
Salt — Rotterdam, 50 bgs.	
Starch — Rotterdam, 81 cs. Antwerp, 307	
Tannic Acid — Rotterdam, 2 cks.	
Tartaric Acid — Rotterdam, 11 cks. Antwerp, 4	
Ultramarine — Hamburg, 2 cks.	
Waste Salt — Hamburg, qty.	
Wood Pulp — Kallero, 3,140 bls. W. Gallagher & Son	
Drammen, 1,000 Gefte, 7,080 Stott, Coker, & Co. Gothenburg, 5,210	
Zinc Oxide — Antwerp, 40 brls.	
Zinc White — Rotterdam, 10 cks.	

HULL.

Week ending November 13th.

Alizarine — Rotterdam, 18 cks. W. & C. L. Ringrose 20 brls.	
Alkali — Rotterdam, 4 cks. W. & C. L. Ringrose	
Arachide Oil — Rotterdam, 1 ct. Hutchinson & Son 2 tins	
Asbestos — Riga, 46 bgs. Wilson, Sons, & Co., Ltd.	
Barytes — Rotterdam, 113 cks. Hutchinson & Son	
Bremen, 60	
Chemicals (otherwise undescribed) Bremen, 8 cs. Veltmann & Co. Hamburg, 5 cks. Wilson, Sons, & Co., Ltd. Antwerp, 88 dms. "	
Cod Oil — Hamburg, 5 brls. Wilson, Sons, & Co., Ltd.	
Aalesund, 125 "	
Colours — Rotterdam, 2 cks. Hutchinson & Son 9 bxs. W. & C. L. Ringrose 11 cks. 22 pks. 1 cs. Wilson, Sons, & Co., Ltd. Antwerp, 14 cks. 17 pks. Wilson, Sons, & Co., Ltd.	
Cottonseed Oil — New York, 375 brls. Wilson, Sons, & Co., Ltd.	
Farina — Hamburg, 50 bgs. Wilson, Sons, & Co., Ltd.	
Danzig, 250 Harlingen, 850 W. & C. L. Ringrose	

Glue — Hamburg, 20 bgs. Wilson, Sons, & Co., Ltd.	
Antwerp, 30 pks. Bailey & Leatham, Ltd.	
Dunkirk, 43 cks. Wilson, Sons, & Co., Ltd.	
Kaolin — Rotterdam, 233 bgs. Hutchinson & Son	
Limestone — Antwerp, 3 cs. Bailey & Leatham, Ltd.	
Magnesium Sulphate — Hamburg, 30 cks. Wilson, Sons, & Co., Ltd.	
Pitch — Uleaborg, 5 brls. J. Good & Sons Antwerp, 12 cks. Wilson, Sons, & Co., Ltd.	
Potash — Gothenburg, 4 brls. Wilson, Sons, & Co., Ltd.	
Antwerp, 20 dms. "	
Dunkirk, 41 pks. "	
Pyrites — Huelva, 690 t.	
Salt — Hamburg, qty. Bailey & Leatham, Ltd.	
Saltpetre — Hamburg, 14 cks. Wilson, Sons, & Co., Ltd.	
Soda — Hamburg, 708 bgs. Wilson, Sons, & Co., Ltd.	
Ghent, 160 Antwerp, 17 dms. "	
Starch — New York, 250 bgs. Bremen, 2,456 pks. Veltmann & Co.	
Ghent, 118 cs. Wilson, Sons, & Co., Ltd.	
Antwerp, 20 Bailey & Leatham, Ltd.	
Amsterdam, 160 W. & C. L. Ringrose Antwerp, 80 Wilson, Sons, & Co., Ltd.	
Stearine — Antwerp, 13 bgs. Wilson, Sons, & Co., Ltd.	
Tallow — Hamburg, 114 tcs. Wilson, Sons, & Co., Ltd.	
New York, 130 Dunkirk, 63 cks. "	
Tar — Uleaborg, 1,550 brls. J. Good & Sons	
Tartaric Acid — Rotterdam, 7 cks. Hutchinson & Son 4 W. & C. L. Ringrose	
Treacle — New York, 1,503 brls. Wilson, Sons, & Co., Ltd.	
Turpentine — Libau, 105 brls.	
Ultramarine — Rotterdam, 21 cks. Hutchinson & Son 4 W. & C. L. Ringrose	
Yarnish — Hamburg, 1 cs. Wilson, Sons, & Co., Ltd.	
Waste Salt — Hamburg, 110 t. Wilson, Sons, & Co., Ltd. 30 bgs. 95 t.	
White Lead — Christiania, 20 cks. Wilson, Sons, & Co., Ltd.	
Rotterdam, 58 Hutchinson & Son	
Antwerp, 81 Bailey & Leatham, Ltd.	
Amsterdam, 34 W. & C. L. Ringrose	
Wood Pulp — New York, 224 rolls. Wilson, Sons, & Co., Ltd.	
" 143 bbls. Hutchinson & Son	
Rotterdam, 70 Drontheim, 900 bls. Wilson, Sons, & Co., Ltd.	
Christiania, 937 Gothenburg, 800 Oporto, 100 Helsingfors, 321 J. Good & Sons	
Zinc Oxide — Antwerp, 5 cks. Bailey & Leatham, Ltd.	

GLASGOW.

Week ending November 18th.

Alumina Sulphate — Rotterdam, 31 cks. J. Rankine & Son	
Arachide Oil — Rotterdam, 25 cks. J. Rankine & Son	
Asbestos — Genoa, 15 pks. 6 cs.	
Barium Chloride — Rotterdam, 4 cks. J. Rankine & Son	
Barium Sulphate — Antwerp, 600 bgs. 42 cks.	
Barytes — Rotterdam, 21 cks. 89 pks. J. Rankine & Son	
Boracic Acid — Leghorn, 10 cks.	
Castor Oil — Antwerp, 55 cks. Marseilles, 257 brls. 56 cs.	
Chemicals (otherwise undescribed) Hamburg, 1 cs. Gothenburg, 30 kgs. 2 cks.	
Chrome Alum — Rotterdam, 15 brls. J. Rankine & Son	
Citric Acid — Messina, 20 cks.	
Cod Oil — St. John's, N.F., 100 cks.	
Colours — Rotterdam, 1 ct. 92 pks. J. Rankine & Son	
Cottonseed Oil — Baltimore, 100 brls.	
Dyestuffs — Alizarine Rotterdam, 58 cks. J. Rankine & Son 1 bx. 28 brls.	
Aniline Colours Rotterdam, 15 bxs. J. Rankine & Son 26 brls.	
Indigo Rotterdam, 1 brl. J. Rankine & Son	
Logwood Cape Haitien, 497 t. Wm. R. Scott	
Shumac Palermo, 600 bgs. 110 bls.	
Farina — Delfslyhl, 2,200 bgs. J. Rankine & Son	
Glucose — Philadelphia, 400 brls. New York, 150	
Glue — Rotterdam, 20 bgs. J. Rankine & Son	
New York, 95 tcs. Genoa, 40 bgs. Christiania, 1 ct.	
Guano — Fray Bentos, 7,056 tgs. Alex. Cross & Sons	
Lamp Black — Gothenburg, 40 cks.	
Manure — Antwerp, 213 bxs.	
Minium — Rotterdam, 16 cks. J. Rankine & Son	
Oxalic Acid — Rotterdam, 6 cks. J. Rankine & Son	
Paint — New York, 2 pks.	
Paraffin Wax — Baltimore, 240 brls.	
Pitch — Marseilles, 5 brls. Archangel, 50 450 cs. Young, Falconer & Co.	
Plumbago — Genoa, 300 bgs.	
Potash — Hamburg, 52 cks.	
Potassium Bromide — Hamburg, 5 cs.	
Pumice Stone — Marseilles, 1 ct. 1 cs. Messina, 20 brls. 60 bgs. 30 cs.	

Pyrites—		
Huelva,	1,701 t.	Tharsis Co.
Soap—		
Boston,	325 brls.	
Philadelphia,	500 bxs.	63 crts.
Marseilles,	3 cs.	
Baltimore,	165 brls.	
Rotterdam,	5 cs.	J. Rankine & Son
New York,	30 bxs.	
Sodium Bromide—		
Hamburg,	1 cs.	
Sodium Salicylate—		
Hamburg,	1 cs.	
Sodium Sulphate—		
Antwerp,	33 cks.	
Starch—		
Antwerp,	196 cs.	
Rotterdam,	35	J. Rankine & Son
Tar—		
Archangel,	2,086 brls.	Young, Falconer & Co.
Tartaric Acid—		
Messina,	8 cks.	
Treacle—		
Philadelphia,	500 brls.	
New York,	500	Waddell & Bryson
Montreal,	5 bxs.	
Philadelphia,	500 brls.	Waddell & Bryson
New York,	672	
Turpentine—		
Antwerp,	100 cks.	
Varnish—		
Antwerp,	1 cs.	
New York,	108 brls.	
Waste Salt—		
Hamburg,	1,016 bgs.	
White Lead—		
Rotterdam,	113 cks.	J. Rankine & Son
10 pks.		
Wood Pulp—		
Rotterdam,	50 bls.	J. Rankine & Son

Gothenburg,	121	
New York,	438	
Christiania,	3,024 bls.	10 cs.
Zinc White—		
Rotterdam,	50 pks.	J. Rankine & Son
10 cks.		

TYNE.

<i>Week ending November 13th.</i>		
Alum Earth—		
Hamburg,	29 cks.	Tyne S. S. Co.
Ammonium Chloride—		
Rotterdam,	2 cks.	Tyne S. S. Co.
Antimony Ore—		
Antwerp,	1,566 bgs.	Tyne S. S. Co.
Arsenic—		
Antwerp,	17 brls.	Tyne S. S. Co.
Asphaltum—		
Hamburg,	381 cks.	Tyne S. S. Co.
Barium Chlorate—		
Rotterdam,	350 bgs.	Tyne S. S. Co.
Barytes—		
Hamburg,	11 cks.	Tyne S. S. Co.
Rotterdam,	469 bgs.	"
Antwerp,	350	"
Carbonic Acid—		
Drontheim,	1 tin	P. H. Matthiessen & Co.
Castor Oil—		
Antwerp,	27 brls.	Tyne S. S. Co.
Cod Oil—		
Drontheim,	12 brls.	P. H. M. 't Hiesse & Co.
Bergen,	5	"
Colours—		
Rotterdam,	8 cks.	Tyne S. S. Co.
Ghent,	4 brls.	"
Antwerp,	1 ck.	"
Limestone—		
Antwerp,	4 crts.	Tyne S. S. Co.
Paint—		
Hamburg,	20 cks.	Tyne S. S. Co.

Potassium Chloride—		
Hamburg,	20 t.	
Salt—		
Hamburg,	202 t.	
Soap—		
Rotterdam,	3 cs.	Tyne S. S. Co.
Starch—		
Rotterdam,	90 cs.	Tyne S. S. Co.
Antwerp,	2	"
Stearine—		
Antwerp,	6 bgs.	Tyne S. S. Co.
Ultramarine—		
Rotterdam,	2 cks.	Tyne S. S. Co.
Varnish—		
Antwerp,	10 brls.	Tyne S. S. Co.
Wolfram (Metal)—		
Hamburg,	2 cs.	Tyne S. S. Co.
Wood Pulp—		
Christiania,	162 bls.	P. H. M. 't Hiesse & Co.
25 cs.		

GOOLE.*Week ending November 10th.*

Alizarine—		
Rotterdam,	33 cks.	
Alkali—		
Calais,	2 cks.	
Antimony—		
Boulogne,	1 ck.	
Caoutchouc—		
Boulogne,	10 cks.	
Chemicals (otherwise undescribed)		
Rotterdam,	17 cks.	
Hamburg,	1	
Colours—		
Hamburg,	20 cks.	
Dyestuffs (otherwise undescribed)		
Amsterdam,	6 cks.	
Boulogne,	18 14 cs.	163 pks.
Rotterdam,	384 84	
Farina—		
Hamburg,	600 bgs.	
Delfsylvl,	400	

Glue—		
Boulogne,		4 pks
Lead Acetate—		
Hamburg,	3 cks.	
Ochre—		
Dunkirk,	97 cks.	
Potash—		
Calais,		21 drs.
Dunkirk,	2 cks.	45
Rosin—		
Boulogne,	1 ck.	
Saltpeire—		
Rotterdam,	170 bgs.	
Soap—		
Rotterdam,	1 cs.	
Starch—		
Ghent,	20 bxs.	
Stearine—		
Hamburg,	1 cs.	
Waste Salt—		
Hamburg,	1,350 bgs.	

GRIMSBY.*Week ending November 13th.*

Albumen—		
Hamburg,	6 cks.	
Barytes—		
Hamburg,	28 cks.	
Caoutchouc—		
Hamburg,	2 cs.	
Rotterdam,	1	
Antwerp,	1	
Chemicals (otherwise undescribed)		
Hamburg,	6 cks.	2 cs.
Colours—		
Antwerp,	58 cks.	1 cs.
Hamburg,	53	2 6 pks.
Plumbago—		
Hamburg,	1 ck.	
Zinc Ashes—		
Antwerp,	5 cks.	

EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.*Week ending November 17th.*

Acids—		
Aden,	3 cs.	£13
Alkali—		
Boston,	3 c.	£9
E. London,	10	5
Rio de Janeiro,	9	8
Hobart,	2	8
Lyttelton,	3 l.	43 20
Ammonia—		
Cape Town,	15 c.	£44
Ammonium Carbonate—		
Stettin,	1 l.	10 c.
Paris,	2	18 70
Bombay,	5	8
Ammonium Chloride—		
Varna,	15 c.	£22
Mersyne,	7	10
Constantinople,	5 t.	145
Ammonium Sulphate—		
Barbadoes,	24 t.	£202
Berlice,	20	170
Calcutta,	5	12 c.
Bremen,	120	1,070
Beyport,	4	35
Martinique,	47	400
Valencia,	50	405
Anhydrous Ammonia—		
Antwerp,	6 cs.	£17
Bisulphite of Lime—		
Calcutta,	7 t.	£103
Boracic Acid—		
Brisbane,	10 c.	£13
Borax—		
Tokyo,	2 cks.	£10
Reval,	1 l.	3 c.
Havre,		34
Galatz,	1	17
Brussels,	1	52
Rotterdam,	23 cks.	27
Carbolic Acid—		
Paris,	15 brls.	£31

Rotterdam,	25 cks.	105
Dusseldorf,	162	1,330
Brisbane,	50 dms	15
Boston,	16	127
Carbonic Acid Gas—		
Halifax,	19 cs.	£106
Jersey,	68 tubes	26
Havre,	30 flasks	140
Sydney,	2 t.	10 c.
Caustic Soda—		
Pt. Elizabeth,	18 c.	£23
Brisbane,	5 t.	39
Wellington,	10	9
Chemicals (otherwise undescribed)		
Rockhampton,	15 pks.	£15
Bombay,	5 cs.	14
Brisbane,	32	26
Christiana,	5 cks.	12 85
Libau,	15 kgs.	30
Santos,	7	16
Melbourne,	20	100
Demerara,	100 crbys.	25 33
Boston,	15 hds.	28
Perth,	65	87
Braila,	8 cks.	25
Halifax,	15	53
Karachi,	50 kldks.	55
Lisbon,	3	12
Mauritius,	4	15
Calcutta,	10	13 pks.
Fremantle,	15	14 kgs.
Hamburg,	34	18 dms.
Norroping,	5	10
Malaga,	1 cs.	45
Madras,	6	14
Cartagena,	2	20
Paris,	6	15
Rotterdam,	10	2 kgs.
Adelaide,	30 pks.	42
Durban,	23	2 cs.
Oporto,	2	25
Citric Acid—		
Genoa,	11 cs.	£55
Ibrail,	2	14
B. Ayres,	8	50

Coal Products—		
Alizarine		
Madras,	10 cks.	£27
Aniline		
Melbourne,	2 cs.	£30
Calcutta,	2	55
Oamaru,	4 pks.	43
Aniline Oil		
New York,	23 dms.	£850
Aniline Salts		
New York,	36 cks.	£280
Anthracene		
Dusseldorf,	170 cks.	£873
Benzol		
Rotterdam,	194 cks.	£853
Naphtha		
Melbourne,	20 dms.	£18
Naphthaline		
Antwerp,	400 bgs.	£217
Hamburg,	6 cks.	617
Cologne,	11	98
Havre,	1	11
Pitch		
Calcutta,	12 pks.	£12
Sydney,	20 brls.	20 cs.
Delagoa Bay,	186 pks.	7
Antwerp,	140 t.	140
Hochfeld,	165	235
Boston,	500 cks.	248
Cette,	1,477	1,680
Melbourne,	10 brls.	9
Prussian Blue		
Amsterdam,	3 cks.	£14
Tar		
Gothenburg,	100 brls.	£73
Calicut,	20 runlets	13
Delagoa Bay,	186 pks.	9
Berlice,	10	9
Durban,	1,150 dms.	49
Cologne,	200	1,180
Calcutta,	102 cks.	48
Tar Salts		
New York,	33 cks.	£400
Toluol		
Rotterdam,	72 cks.	£350
Coal Products (otherwise undescribed)		
Brussels,	1 ck.	£13

Copper Sulphate—		
Cologne,	6 l.	£227
Brussels,	5	83
Danzig,	13 15 c.	230
Paris,	25	119
Cream of Tartar—		
Fremantle,	5 c.	£22
Brisbane,	5	21
Adelaide,	1 l.	77
Melbourne,	2 10	295
Wellington,	1 14	134
Disinfectants—		
Brisbane,	3 pks.	£21
Penang,	10 cks.	200 dms.
Calcutta,	120 350	195
Alexandria,	7	12
Hamburg,	50	250
Madras,	17	31
Durban,	1 cs.	32 40 kgs.
Fremantle,	59	35
Wellington,	11	27
Bombay,	5 cks.	240 dms.
Hong Kong,	10	26
Dried Blood—		
New York,	100 t.	£615
Guano—		
Dunkirk,	120 t.	£40
Lime—		
New York,	4 l.	24 c.
Manure—		
Cancale,	84 t.	£40
Guadeloupe,	640	3,500
Malaga,	4	1 c.
Mauritius,	20	110
Nitric Acid—		
Fremantle,	12 c.	£23
Phosphate of Lime—		
New York,	2 t.	6 c.
Potash—		
Gothenburg,	5 t.	3 c.
Rouen,	1	31
Potassium Chlorate—		
Bombay,	2 t.	£1
Potassium Chloride—		
Beyport,	8 t.	3 c.

salum Cyanide—

Elizabeth,	3 t.	£67
Friday Is.,	1 6 c.	105
London,	5	53
bourne,	2 25 cs.	383

salum Prussiate—

burg,	2 cks.	£33
eldorf,	2	25
York,	20	300

Lake—

erp,	135 t.	£226
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etre—

ington,	2 t. 19 c.	£64
an,	10	11
ideo,	15	22
to,	14	13
to,	7 3	132
si,	2 5	46

Dip—

ey,	4 t. 11 c.	£52
res,	8	7 2,000 cs. 4,690
itta,	225 dms.	31
and Is.,	166	9 cks. 4 brls. 286
oa Bay,	12 c.	25
er,	2 t. 13	130
an	5	20

ndam,

ndam,	5 t.	£10
30		

Ash—

antle	5 t. 12 c.	£24
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Crystals—

ay,	2 t. 5 c.	£4
ltar,	2 10	7

m Acetate—

ane,	2 t. 14 c.	£49
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m Bicarbonate—

aville,	16 c.	£10
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ane,

ane,	1 t.	8
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m Nitrate—

it,	20 t. 3 c.	£155
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ur—

ndon,	500 bgs.	£275
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uric Acid—

lad,	1 t. 14 c.	£17
in,	1 10	13

phosphates—

it,	10 t.	£36
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re,

re,	10 4 c.	38
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ric Acid—

izabeth,	2 c.	£12
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ntle,

ntle,	5	32
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y,

y,	10	58
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cia,

cia,	5	30
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VERPOOL.

ending November 17th.

Acid—

	1 t. 14 c.	£13
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ca,

ca,	1 t. 6 c.	£6
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cal,

cal,	45 3	2 q. 193
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leo

leo	1 2 3	6
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rancisco,

rancisco,	13 6 3	59
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ta,

ta,	51 18 2	264
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ara,

ara,	7 5	40
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s,

s,	14 15 2	81
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urme,

urme,	1 10	9
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ne,

ne,	1 10	9
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owm,

owm,	4 18 1	3 88
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s,

s,	4 19 3	25
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es,

es,	1 6 2	7
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r,

r,	1 19 3	10
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a Sulphate—

al,	3 t. 2 c.	£10
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ila—

ila,	2 c. 3 q.	£5
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ium Carbonate—

ruz,	1 t. 5 c.	£44
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rk,

rk,	2 4	17
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rk,

rk,	3 10	73
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rne,

rne,	3 10	9
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um Chloride—

al,	6 c.	£9
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die,

die,	12	20
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nght,

nght,	7	10
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gh,

gh,	10	10
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gh,

gh,	5	8
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gh,

gh,	10	15
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gh,

gh,	2	6
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gh,

gh,	4	6
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Ammonium Sulphate—

Genoa,	2 t. 1	184
Alexandria,	5 10	202
Beyrout,	18	28
Calcutta,	1 4	37
Gijon,	10	17

Ammonium Sulphate—

New York,	121 t. 10 c.	£1,050
San Francisco,	151 1	3 q. 1,322
Ghent,	50	405
Cartagena, Sp.,	15 3	120
Venice,	26	234
Demerara,	70 4	585
Boston,	10	83
Lisbon,	5 8	43
Teneriffe,	15 9	130
Almeria,	21 15	168
Genoa,	10 1 2	82
Las Palmas,	16 2 1	132
Valencia,	109 14	877

Arsonic—

B. Ayres,	1 t. 15 c. 2 q.	£40
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Bleaching Powder—

Alexandria,	7 brls.	
Baltimore,	116 cks. 28 pks.	
Bilbao,	29	
Bombay,	54 18 cs.	
Boston,	850	
Calamata,	5	
Dunkirk,	18	
Genoa,	87	
Ghent,	75	
Gothenburg,	66	
Leghorn,	45	
Malaga,	5	
Naples,	50	
Newport News,	477	
New York,	604	
Uporto,	4	
Passages,	2	
Patras,	5	
Philadelphina,	123	
Piraeus,	13	
Rouen,	87	
Venice,	20	
Shanghai,	1 t. 5 c.	£13

Borac c Acid—

Antwerp,	10 c.	£12
Christiania,	10	8
Rotterdam,	12	15

Borax—

Danzig,	1 t. 1 c. 1 q.	£15
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Borax—

Antwerp,	20 8 2	326
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Borax—

Tampico,	5 2	5
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Borax—

Savanilla,	5 3	5
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Borax—

Calcutta,	2 2 1	36
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Borax—

Havana,	19 1	17
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Borax—

Piraeus,	4 14	70
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Borax—

Hamburg,	1 1	15
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Borax—

Christiania,	1 12 2	38
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Borax—

Brisbane,	10 10	12
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Borax—

Rotterdam,	1 14 2	30
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Borax—

Copenhagen,	2 2	33
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Carbolic Acid—

Montreal,	15 c.	£26
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Carbolic Acid—

Vera Cruz,	2	8
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Carbolic Acid—

Rotterdam,	21 t. 10	807
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Carbolic Acid—

Hio,	5 10	354
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Carbolic Acid—

Campana,	1	30
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Carbolic Acid—

Yokohama,	10 9 2	628
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Carbolic Acid—

Rouen,	1 6 3	91
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Carbolic Acid—

Hong Kong,	5	9
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Caustic—

Boston,	50 dms.	
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Caustic Potash—

Brisbane,	54	
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Caustic Potash—

Melbourne,	2 t. 5 c.	£49
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Caustic Soda—

Adelaide,	52 dms.	
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Caustic Soda—

Ancona,	43	
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Caustic Soda—

Antwerp,	15	
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Caustic Soda—

Baltimore,	430 80 pks.	
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Caustic Soda—

Barcelona,	250 30 cks.	
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Caustic Soda—

Bari,	120	
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Caustic Soda—

Bilbao,	30	
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Caustic Soda—

Bombay,	46	
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Caustic Soda—

Boston,	10	
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Caustic Soda—

B. Ayres,	100	
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Caustic Soda—

Callao,	50	
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Caustic Soda—

Canea,	20	
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Caustic Soda—

Cartagena,	106	
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Caustic Soda—

Catania,	20	
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Caustic Soda—

Delagoa Bay,	25 cs.	
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Caustic Soda—

Demerara,	15	
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Caustic Soda—

Dunkirk,	3	
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Caustic Soda—

E London,	30	
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Caustic Soda—

Hiogo, 4 t. 17	1,075	Demerara, 2,033	Hong Kong, 14	Borax—	
Shanghai, 3 6	460	E. London, 1,042	Lisbon, 70	Tunis, 1 ck.	
Potash—		Genoa, 130	Madras, 50	Colours—	
B. Ayres, 2 t. 4 c. 3 q. £9		Gibraltar, 106	Montreal, 200	Antwerp, 2 cks.	
Potassium Bicarbonate—		Guayaquil, 525	New Plymouth, 40	Larnaca, 7 1 brl.	
Montreal, 5 c. £8		Hamburg, 30	New York, 10	Copperas—	
Salonica, 2 t. 1 1 q. 82		Humacao, 7	Odessa, 150	Beyrout, 30 brls.	
Potassium Bichromate—		Lagos, 126	Piræus, 30	Jaffa, 15	
Leghorn, 5 c. £20		Kingston, 7	Pt. Elizabeth, 50	Mersyne, 50	
Vera Cruz, 1 t. 42		Lanzarote, 546	Pt. Natal, 100 20 bgs.	Tripoli, 15	
Potassium Chlorate—		Lisbon, 1	Rangoon, 50	Tunis, 4 cks.	
San Francisco, 1 t. 5 c. £48		Madras, 18	Rotterdam, 20	Cottonseed Oil—	
Hiogo, 5 150		Manaos, 720	Rouen, 232 33 brls.	Tunis, 125 brls.	
Kalmar, 2 10 110		Manila, 2	St. John's, 20	Disinfectants—	
Rotterdam, 10 16		New York, { 254 175	Santos, 173	Bombay, 1 cs.	
Shanghai, 5 153		Para, 50 1 35	Stettin, 20	Glue—	
Gothenburg, 3 10 119		Penang, 2 25 brls.	Vera Cruz, 160	Antwerp, 6 cks.	
Potassium Cyanide—		Pernambuco, 2	Sodium Bichromate—	Hamburg, 5	
Melbourne, 10 cs. £90		Piræus, 1,300 422	Hamburg, 6 cks.	Linseed Oil—	
Delagoa Bay, 1 t. 90		Rangoon, 500 22	Sodium Carbonate—	Alexandria, 25 brls.	
Potassium Prussiate—		Punta Arenas, 25	Boston, 56 brls.	Beyrout, 13 cks. 3	
Campagna, 2 c. £6		Rotterdam, 305	New York, 112	Larnaca, 1	
Genoa, 2 t. 2 115		St. John's, 30	Sodium Chlorate—	Tunis, 1	
Salt—		St. Lucia, 275	Newfairwater, 20 brls.	Naphtha—	
Algoa Bay, 50 t.		St. John's, N'd., 155	New York, 50 kgs.	Rotterdam, 10 dms.	
Amsterdam, 176		Sapeli, 150	Rotterdam, 1 ck.	Naphthol—	
Antwerp, 200		Shanghai, 1,250	Sodium Hyposulphite—	Rotterdam, 4 cks.	
Barbadoes, 94 8 c.		Sierra Leone, 52	Brisbane, 40 kgs.	Paint—	
Berly, 226 10		Singapore, 900	San Francisco, 100	Beyrout, 50 kgs.	
Boston, 300		Teneriffe, 226	Montreal, 100	Jaffa, 2 cks. 1 ck.	
Brisbane, 158		Valparaiso, 120	Sodium Sulphate—	Paraffin Wax—	
B. Ayres, 9 6		Warri, 150	Piræus, 43 cks.	Rotterdam, 5 cks.	
Calcutta, 959		Sodium Sulphite—	Montreal, 10 cks.	Larnaca, 8 cs.	
C. C. Castle, 1,000 bgs.		Sulphur—	Sulphuric Acid—	Pitch—	
Cape Palmas, 200 sks.		Demerara, 21 t. 11 c. 3 q. £135	Cape Coast, 2 cs. £10	Antwerp, 2,101 c.	
Cape Town, 25 cs.		Boston, 175 7 748	Superphosphates—	Salt—	
Casamance, 6,538		Cape Coast, 2 cs. £10	Valencia, 75 t. 5 c. £163	Rotterdam, 315 t.	
Christiania, 2,287		Valencia, 75 t. 5 c. £163	Marseilles, 9 17 23	Soda Alkali—	
Conakry, 9,141		St. Malo, 280 2 2 q. 569	Genoa, 50 14 1 136	Monastier, 40 brls.	
Dubreka, 7,500		Venice, 49 5 122	Bordeaux, 81 5 1 171	Sodium Naphthionate—	
E. London, 550		Teneriffe, 10 34	Cullera, 500 1,240	Antwerp, 62 cks.	
Egwanga, 1,500		Tartaric Acid—	Tin Crystals—	Rotterdam, 15	
Ghent, 175 t. 1,500		Vera Cruz, 3 c. £17	Trinidad, 1 t. 9 c. 2 q. £86	Starch—	
Hamburg, 10,587 bgs.		Constantinople, 2 7	Tin Oxide—	Bombay, 6 cks.	
Kingston, 2,689		Yarnish—	Montreal, 10 c. £39	Tallow—	
Lagos, 1,120		Barcelona, 1 ck.	White Lead—	Rotterdam, 6 cks.	
Montreal, 4,720		Callao, 2 cs.	Pt. Natal, 120 kgs.	Tar Oil—	
Mossel Bay, 2,025		Campagna, 20	St. Thomas, 50	Hamburg, 84 cks.	
N. Orleans, 50 t.		Constantinople, 3	Sierra Leone, 80	Antwerp, 10	
New York, 110 5 c.		Genoa, 5 pks.	Zinc Chloride—	Turpentine—	
Old Calabar, 208 2		Hamburg, 1 10 dms.	Piræus, 4 t. 14 c. £70	Alexandria, 70 dms. 24 brls.	
Para, 200		Madras, 3	Varna, 8 97		
Philadelphia, 200		Mollendo, 3			
Pt. Elizabeth, 8 18		Pacasmayo, 2			
Portland, Me., 50		Salaverry, 2 78			
Pt. Natal, 575		Shanghai, 78			
Rangoon, 622		Soda Crystals—			
Rio Munez, 129 16		Antwerp, 56 brls.			
Rotterdam, 180		B. Ayres, 70 200 cks.			
San Francisco, 204 18		Gibraltar, 25 kgs 25			
Sherbro, 48 15		Halifax, 20 20			
Sierra Leone, 24		Montreal, 20 20			
Valparaiso, 300 50 cs.		Oporto, 20 20			
Victoria, B. C., 70		Portland, Or., 100 10			
Salt Cake—		Shanghai, 10			
Bombay, 10 c. £1 106.		Soda Oxide—			
Baltimore, 40 t. 7 £60		Leghorn, 5 cs.			
Terneuzen, 200 260		Sodium Bicarbonate—			
Montreal, 1 2		Alberg, 35 dms. 2 cks.			
Saltpetre—		Alexandria, 10 bgs. 6			
Piræus, 1 t. £21		Algoa Bay, 35 kgs.			
Halifax, 1 1 q. 21		Barcelona, 25			
Manaos, 1 10 c. 33		Bombay, 350			
Sheep Dip—		Brindisi, 20			
E. London, 2 t. 15 c. £32		Braia, 69			
Cape Town, 6 5 125		B. Ayres, 50 bgs. 18			
Calcutta, 2 17 2 q. 63		Cape Town, 85 5 brls.			
B. Ayres, 75 7 2 1,604		Cartagena, 10			
Pt. Natal, 8 2 16		Delagoa Bay, 10			
Soap—		Demerara, 20			
Accra, 100 bxs.		Dunkirk, 10			
Alexandria, 70 5 cs. 40 dms.		Dunedin, 270			
Akassa, 20 22		Genoa, 40			
Algoa Bay, 261 310		Halifax, 205			
Antigua, 25					
Arecibo, 25					
Arim, 120					
Barbadoes, 1,028 6					
Bombay, { 1,581 5 25 pks. 50 brls.					
B. Ayres, 10 4 8 crts.					
Calcutta, 250					
Campagna, 30					
C. C. Castle, 601					
Cape Labon, 165					
Christiania, 6					
Colombo, 40					
Copenhagen, 320					
Curacao, 735					
Delagoa Bay, 735					

HULL.

Week ending November 13th.

Alkali—	
Bremen, 120 bgs.	
Drontheim, 3 dms.	
New York, 200	
Ammonium Sulphate—	
Dunkirk, 755 bgs.	
Aniline Colours—	
New York, 8 cks.	
Aniline Oil—	
New York, 5 dms.	
Antimony—	
Boston, 15 cks.	
Barytes—	
Stettin, 3,320 t.	
Bleaching Powder—	
Abo, 15 cks.	
Riga, 79	
Caustic Soda—	
Abo, 2 cks.	
Riga, 170 dms.	
Wassa, 5	
Chemicals (otherwise undescribed)	
Abo, 37 cks.	
Antwerp, 17 4 cs.	
Amsterdam, 25 1	
Bremen, 1 6	
Bari, 2 18 pks.	
Christiania, 35	
Copenhagen, 33 50	
Fiume, 33	
Genoa, 7 1 667	
Gothenburg, 6 65	
Hamburg, 56 74	
Konigsberg, 2 42	
Libau, 10 6 305	
Rotterdam, 60 18 brls.	
Riga, 14	
St. Petersburg, 7	
Stettin, 14	
Trieste, 7	
Wassa, 7	

MANCHESTER.

Week ending November 17th.

Alum—	
Jaffa, 30 brls.	
Mersyne, 50	
Tripoli, 15	
Ammonium Carbonate—	
Hamburg, 10 cks.	
Ammonium Chloride—	
Cairo, 10 cks.	
Mersyne, 2 brls.	
Aniline Colours—	
Hamburg, 19 pks.	
Aniline Oil—	
Hamburg, 10 dms.	
Rotterdam, 2	
Antwerp, 1	
Aniline Salts—	
Hamburg, 10 cks.	
Asbestos—	
Bombay, 1 cs.	

Metals (otherwise undescribed.)—

Ed Oil—	42 brls.
m, 219 c.	
m, 2,760	
m, 167	
en, 18	
m, 150	
m, 36	
g, 173	
m, 1,326	
m, 4,970	
m, 472	
m, 500	
m, 100	
m, 3,891	
(otherwise undescribed)	
m, 45 cks.	
m, 2	
burg, 9 cs.	
m, 5 bgs.	
m, 500 sks.	
Oil—	
m, 7 c.	
m, 126	
en, 14	
und, 126	
m, 34	
m, 203	
m, 30 cs.	
m, 52 cks.	
m, 1 ck.	
Colours—	
m, 2 cks. 17 cs. 34 dms.	
m, 8 14 8	
m, 4 1 30	
en, 20 1 1	
m, 10 1 1	
m, 1 1 1	
g, 9 1 1	
m, 12 1 1	
m, 4 15 5	
m, 3 3 8	
m, 5 30	
e—	
m, 205 t.	
en, 4 cks.	
m, 477 t.	
m, 1 cs.	
m, 1 1	
m, 50	
m, 32 sks.	
m, 8 cks.	
m, 35 brls.	
m, 31	
en, 30 cks.	
m, 40	
m, 11	
m, 11	
m, 3 dms.	
m, 5 cks.	
m, 4 cs.	
m, 2	
m, 1	
m, 1	
m, 2 cks.	
LASGOW.	
ending November 18th.	
id—	
m Carbonate—	£45
m, 10 c.	£29

Ammonium Sulphate—

Italy,	30 t.	
Mauritius,	15	¾ c.
Valencia,	259	15 188 lbs.
Barcelona,	141	15 ¾
Bordeaux,	20	6 ½
Cullera,	91	8 ¾
Kingston,	5	1 ¾
Trinidad,	47	3 ¾
Rotterdam,	152	7
France,	81	4
U.S.A.,	77	10

Boracic Acid—

Sydney,		£74
U.S.A.,		£72 16s.

Castor Oil—

Sydney,		£78
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Caustic Soda—

Canada,	15 t.	4 c.
Barcelona,	4	6 ½

Chemicals (otherwise undescribed)

Rotterdam,		£45
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Coal Products—**Benzine**

France,		£74
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Benzol

Hamburg,	4 t.	9 c.
Rotterdam,		£308

Creosote Oil

Russia,		£220
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Naphthaline

France,		£130
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Pitch

Bombay,		£48
Egypt,		20
Gothenburg,		290
Italy,		190
Hamburg,	110 t.	17 c.
Canada,		353
France,		1,056
U.S.A.,		175

Tar

Bombay,		£148
U.S.A.,		95
Drontheim,	5 t.	18 c.
Canada,		212
Riga,	112	
Russia,		294

Tar and Pitch

Calcutta,		£62 10s.
Madras,		£71

Coal Products (otherwise undescribed.)—

Rotterdam,		£110
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Cod Oil—

Melbourne,		£50
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Dried Blood—

U.S.A.,	4,032 lbs.	
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Extracts—

Spain,		£78
Sydney,		£16 15s.
Toronto,		£165
Christiania,		20
Canada,		534

Gelatine—

Canada,		£181
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Glue—

Canada,		£56
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Lead Nitrate—

Canada,		£60
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Linseed Oil—

Mauritius,		£65
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Litharge—

Montreal,		£32
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Magnesium Sulphate—

Sydney,		£33
Christiania,		35
Canada,		£47 17s.

Manganese—

Italy,		£25
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Manganese Oxide—

U.S.A.,		£120
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Manure—

Hong Kong,	5 t.	2 c.
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Paint—

Mauritius,		£67
Bombay,		126
Colombo,	qty.	
Vera Cruz,		39
Limon,		30
M. Video,		35

Painters' Colours—

Cape Town,		£48
E. London,		£35 19s.
Mossel Bay,	qty.	
Sydney,		£522
Calcutta,		"
M. Video,		"
Rotterdam,		4
Bombay,		"
Melbourne,		"

Paraffin Wax—

Italy,		£63
Sicily,		36
Barcelona,		208
Bordeaux,		29
Riga,	30 t.	2 c.
Rotterdam,		4
Russia,		615

Potassium Bichromate—

Hjogo,		£208
Canada,		328
Madras,		52

Potassium Chlorate—

Sydney,		£137
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Potassium Cyanide—

Singapore,		£84
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Potassium Sulphate—

Sydney,		£40
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Sheep Dip—

B. Ayres,		£163
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Soap—

Barbadoes,	1 t.	2 ¾ c.
Grenville Bay,	1	6
Bombay,	13	2 ½
Puerto Cortes,	1	8

Sodium Bichromate—

Barcelona,	14 t.	3 ¾ c.
Italy,	5	¾
Canada,	3	2 ½

Sulphuric Acid—

Bombay,		£44 10s.
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Tallow—

Rotterdam,	18 t.	14 c.
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Treacle—

Cape Town,	14 t.	16 c.
Gothenburg,	29	9 ½
Christiania,	22	13 ½
Bergen,	2	12

White Lead—

Johannesburg,		£35
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TYNE.

Week ending November 13th.

Alkali—

Reval,	30 t.	8 c.
Rotterdam,	3	1
Copenhagen,	29	19
Hamburg,	5	4
Riga,	39	15

Ammonia—

Barcelona,	1 t.	1 c.
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Ammonium Chloride—

Barcelona,	1 t.	4 c.
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Antimony—

Rotterdam,	11 t.	
Hamburg,	18	10 c.
Genoa,	7	13
Reval,	10	
Antwerp,	1	

Barium Binoxide—

Rouen,	10 t.	17 c.
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Barium Carbonate—

Hamburg,	100 t.	
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Barytes—

Dunkirk,	1 t.	
Antwerp,	20	18 c.

Bleaching Powder—

Amsterdam,	41 t.	3 c.
Dunkirk,	5	
Rotterdam,	11	15
Drontheim,	15	1
Hamburg,	29	16
Antwerp,	20	1
Christiania,	1	10
Riga,	78	19

Caustic Soda—

Valencia,	10 t.	
Genoa,	20	6 c.
Reval,	87	1
Copenhagen,	8	13
Hamburg,	121	17
Antwerp,	9	17
Riga,	20	4

Chemicals (otherwise undescribed)

Antwerp,		10 c.
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Farina—

Bergen,	4 t.	
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Litharge—

Hamburg,	3 t.	5 c.
Antwerp,	1	2
Genoa,		5

Magnesia—

Rotterdam,		9 c.
Hamburg,		7
Genoa,	2 t.	2

Manganese—

Antwerp,		3 q.
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Manure—

Valencia,	277 t.	
Pomaron,	50	

Naphthaline—

Riga,	24 t.	1 c.
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Paint—

Copenhagen,	1 t.	
Hamburg,	4	
Antwerp,	7	12 c.

Phosphorus—

Valencia,	2 t.	11 c.
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Salt—

Bergen,		4 c.
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Soda—

Amsterdam,	230 t.	3 c.
Harlingen,	10	3
Odense,	6	16
Leghorn,	9	18
Messina,	3	4
Reval,	15	3
Rotterdam,	10	
Genoa,	10	3
Drontheim,	40	2

Sodium Hyposulphite—

Naples,	20 t.	10 c.
Rotterdam,	1	7
Bergen,	6	

Sodium Nitrate—

Antwerp,	1 t.	1 c.
----------	------	------

Sodium Sulphate—

Moss,	245 t.	
Genoa,	5	9 c.
Gothenburg,	525	

Sulphur—

Ghent,	6 t.	1 c.
Hamburg,	30	
Christiania,	350	
Riga,	10	1

Tallow—

Genoa,	5 t.	9 c.
--------	------	------

White Lead—

Riga,	2 t.	8 c.
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GOOLE.

Week ending November 10th.

Alkali—

Ghent,	3 cks.	
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Benzol—

Boulogne,	25 cks.	
Rotterdam,	147	

Chemicals (otherwise undescribed)

Amsterdam,	16 cks.	10 pks.
Ghent,	4	
Hamburg,	80	170 dms.

Coal Products (otherwise undescribed.)—

Antwerp,	15 cks.	
Boulogne,	51	1 dm.
Rotterdam,	50	

Colours—

Boulogne,	6 tins	
Calais,	1	
Ghent,	1 ck.	
Rotterdam,		3 cs.

Creosote Oil—

Kuysna,	1,544 cks.	
---------	------------	--

Manure—

Dunkirk,	134 bgs.	
Ghent,	155	

Pitch—

Antwerp,	635 t.	
Dunkirk,	280	

Soap—

PRICES CURRENT.

WEDNESDAY, NOV. 24TH, 1897.

PREPARED BY MESSRS. HIGGINSBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary

Acids:—

		£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/9	&	8/9
" Glacial	"			40/-
Arsenic S.G., 2000°	"	1	4	0
Fluoric	per lb.	0	0	3½
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0	10
" (Cylinder), 30° Tw.	"	0	3	0
Nitric 80° Tw.	per lb.	0	0	1½
Nitrous	"	0	0	1½
Oxalic	nett	0	0	3½
Phosphoric, 1750°	"	0	0	11½
Picric	"	0	0	11
Sulphuric (fuming 50 %)	per ton	15	10	0
" (monohydrate)	"	5	10	0
" (Pyrites, 168°)	"	3	0	0
" " 150°	"	1	5	0
" (free from arsenic, 145°)	"	1	7	6
Sulphurous (solution) S.G. 1025	"	3	0	0
Tannic (pure)	per lb.	0	1	2½
Tartaric	"	0	1	1½
Arsenic, white powdered	nett per ton	21	15	0
Alum (loose lump)	"	4	10	0
Alumina Sulphate (pure)	"	4	2	6
Aluminoferrous	"	2	3	6
Aluminium (Ingot metal 98/99¼ %	nett	148	0	0
Ammonia, Anhydrous	per lb.	0	1	3
" 880=28° B.	"	0	0	2½
" =24° B.	"	0	0	1½
" Carbonate	nett	0	0	3
" Muriate	per ton	18	0	0
" (sal-ammoniac) 1st & 2nd	per cwt.	33/-	&	31/-
" Nitrate	per ton	31	0	0
" Phosphate	per lb.	0	0	3½
" Sulphate (grey) London	per ton	8	17	6
" (grey) Hull	"	8	17	6
Aniline Oil (pure)	per lb.	0	0	7½
Aniline Salt	"	0	0	6½
Antimony	per ton	29	5	0
" (tartar emetic)	per lb.	0	0	8
" (golden sulphide)	"	0	0	10
Barium Chloride	per ton	6	15	0
" Carbonate (native)	"	3	10	0
" Sulphate (native levigated)	"	42/6	to	65/-
Bleaching Powder, 35 %	nett	6	2	6
" Liquor, 7 %	"	3	10	0
Bisulphide of Carbon	"	12	0	0
Chromium Acetate (crystal)	per lb.	0	0	6
Calcium Chloride	per ton	2	5	0
China Clay (at Runcorn) in bulk	"	15/-	to	30/-
Coal Tar Products and Dyes:—				
Alizarine (artificial) 20 %	nett per lb.	0	0	6¾
Magenta	"	0	3	0
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0	0	6
Benzol, 90's	per gallon	0	1	10½
" 50/90	"	0	2	1
Carbolic Acid (crude 60°)	per gallon	0	2	0
" (crystallised 40°)	per lb.	0	0	7
" (liquid 95/97%)	per gallon	0	1	0
Creosote (ordinary)	"	0	0	2½
" (filtered for Lucigen light)	"	0	0	3
Crude Naphtha 30 % @ 120° C.	"	0	0	10
Grease Oils, 22° Tw.	per ton	2	15	0
Pitch, f.o.b. Liverpool or Garston	"	2	18	0
Solvent Naphtha, 90 % at 160°	per gallon	0	1	8
Copper	per ton	48	0	0
" Sulphate	"	16	5	0
" Oxide (copper scales)	"	44	10	0
Glycerine (crude)	"	24	1	0
" (distilled S.G. 1250°)	"	40	0	0
Iodine	nett, per oz.	0	0	7½
Iron Sulphate (copperas)	per ton	1	10	0
" Sulphide (antimony slag)	"	2	0	0
Lead (sheet)	"	14	7	6
" Litharge Flake (ex ship)	"	17	0	0
" Acetate (white)	"	23	0	0
" " brown	"	17	0	0
" (white lead) pure	"	17	0	0
" "	"	20	0	0

Lime, Acetate (brown) (ex ship)	per ton	5	12	6
" (grey) (ex ship)	"	8	0	0
Magnesium (ribbon and wire)	per oz.	0	2	3
" Chloride (ex ship)	per ton	2	10	0
" Carbonate	per cwt.	1	17	6
" Calcined Magnesia	per ton	8	0	0
" Sulphate (Epsom Salts)	per ton	2	15	0
Manganese, Sulphate	"	16	0	0
" Borate	per cwt.	2	10	0
" Ore, 70 %	per ton	3	10	0
Methylated Spirit, 61° O.P.	per gallon	0	1	8
Naphtha (Wood), Solvent	"	0	2	9
" " Miscible, 60° O.P.	"	0	3	7
Oils:—				
Cotton-seed	per ton	16	10	0
Linseed	"	15	15	0
Stearine	per ton	22	0	0
Phosphorus (yellow)	per lb.	0	2	2
" (red)	"	0	2	8
Potassium (metal)	per oz.	0	3	7
" Bichromate	nett per lb.	0	0	4¼
" Carbonate, 90% (ex ship)	per ton	16	10	0
" Chlorate	per lb.	0	0	3¼
" Cyanide, 98%	"	0	1	1
" Hydrate (Caustic Potash) 90 %	per ton	23	10	0
" (Caustic Potash) 75/80 %	"	19	15	0
" Potash Hydrate Liquid 50 %	"	11	5	0
" Nitrate (renned)	per cwt.	1	1	6
" Permanganate	per cwt.	3	15	0
" Prussiate Yellow	per lb.	0	0	6¼
" Sulphate, 90 % (ex ship)	per ton	9	15	0
" Muriate, 80 % (do.)	"	8	10	0
Silver (metal)	per oz.	0	2	3¼
Sodium (metal)	per lb.	0	2	9
" Carb. (refined Soda-ash) 48 %	nett per ton	4	15	0
" (Caustic Soda-ash) 48 %	"	4	5	0
" (Carb. Soda-ash) 48 %	"	4	0	0
" (Alkali) 58 %	"	3	17	0
" (Soda Crystals)	"	2	5	0
" Acetate (ex-ship)	"	10	10	0
" Arseniate, 45 %	"	14	7	6
" Chlorate	per lb.	0	0	4½
" Borate (Borax)	net, per ton	14	0	0
" Bichromate	per lb.	0	0	3¾
" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	"	8	10	0
" (74 % Caustic Soda)	"	8	2	6
" (70 % Caustic Soda)	"	7	7	6
" (60 % Caustic Soda)	"	6	7	6
" (pure liquor 90° Tw.)	"	3	12	6
" 77/78 % powdered (69 % hydrate)	"	12	10	0
" Bicarbonate	"	6	10	0
" Hypsulphite	"	5	5	0
" Manganate, 25%	"	15	0	0
" Nitrate (95 %) ex-ship Liverpool	per cwt.	0	7	7½
" Nitrite, 98 %	per ton	26	10	0
" Phosphate	"	9	10	0
" Silicate (glass)	per ton	4	10	0
" (liquid, 100° Tw.)	"	3	7	6
" Stannate, 40 %	per cwt.	3	2	9
" Sulphate (Salt-cake)	per ton	0	19	0
" (Glauber's Salts)	"	1	7	6
" Sulphide	"	6	15	0
" Sulphite	"	5	0	0
Strontium Hydrate, 100%	"	10	15	0
Sulphocyanide Ammonium, 95 %	per lb.	0	0	5¾
" Barium, 95 %	"	0	0	4
" Potassium	"	0	0	6¼
Sulphur (Flowers)	per ton	7	10	0
" (Roll Brimstone)	"	6	10	0
" Brimstone: Best Quality	"	4	10	0
Superphosphate of Lime (26%)	"	2	3	0
Tallow (Beef)	"	18	10	0
Tin Crystals	per lb.	0	0	4¼
" English Ingots	per ton	6	0	0
Zinc (Spelter)	"	18	1	3
" (Chloride 100% 100° Tw.)	"	5	15	0
" Sulphate, Crystal	"	5	15	0

THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

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Vol. XXI.

Contents.

	PAGE		PAGE
To Be or Not To Be.....	353	Trade Notes.....	361
Correspondence.....	354	Tar and Ammonia Products.....	361
The Patent List.....	355	Miscellaneous Chemical Market.....	361
Abstracts of Latest Complete Specifications.....	355	Report on Manure Material.....	361
Reports of Companies.....	355	Liverpool Oil and Colour Market.....	361
Society of Chemical Industry.....	356	Hull Paint, Oil, and Colour Report.....	361
Manchester Sewage Prosecution.....	356	West of Scotland Chemicals.....	361
Selected Correspondence.....	357	Tyne Chemical Report.....	362
The Septic Sewage System.....	358	New Companies.....	362
Arc Light and Eyesight.....	359	Imports.....	362
Legal Intelligence.....	360	Exports.....	362
Fatality to a Chlorate Miller.....	360	Prices Current.....	368

LATE ADVERTISEMENTS.

WANTED a FOREMAN at a Glue Works in the Midlands. Only those having good experience in Glue manufacture need apply.—Write, with full particulars, to The Gallow Hill Glue and Chemical Co., Ltd., 36, Mark-lane, London, E.C.

CENTRIFUGAL 36-in. Machine Wanted, second-hand, good condition.—Particulars to "S. 284," *Chemical Trade Journal* Office, Manchester.

Notices.

All communications for the *Chemical Trade Journal* should be addressed, and Cheques and Post Office Orders made payable to—

DAVIS BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

"Expert, Manchester."

NATIONAL TELEPHONE, 3060.

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Readers are invited to forward items of intelligence, or cuttings from local newspapers, of interest to the trades concerned.

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Articles, reports, and correspondence on all matters of interest to the Chemical and allied industries, home and foreign, are solicited. Correspondents should condense their matter as much as possible, write on one side only of the paper, and in all cases give their names, and addresses, not necessarily for publication. Sketches should be sent on separate sheets.

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Prepaid Advertisements of Situations Vacant, Premises on Sale or To be Let Miscellaneous Wants, and Specific Articles for Sale by Private Contract are inserted in the *Chemical Trade Journal* at the following rates:—

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Trade Advertisements, Announcements in the Directory Columns, and all Advertisements not prepaid, are charged at the Tariff Rates, which will be forwarded on application.

Advertisements intended for insertion in the current week's issue should reach the office by **Thursday morning** at the latest.

TO BE OR NOT TO BE.

IT is customary about this time of the year to read a number of eulogisms on the glories of technical education, by which it is hoped young men will be encouraged to study chemistry and other sciences. We have also heard much of late about the excellencies of the German system of education, especially in technical subjects.

One of the complaints constantly brought forward by those engaged in the spreading of technical instruction is that manufacturers do not draw their men from the ranks of young trained technologists to the extent that they ought, and though first the justice and then the injustice of this plaint are constantly being instanced, there are numbers of gentlemen engaged in professions—not trades—who do not fail to seek the services of competent, though young chemists. The only drawback to the support thus accorded is that the terms on which it is offered are very often so demeaning that no self-respecting competent chemist, however young, can possibly avail himself of the opportunities such gentlemen offer.

We think it will be as well if, in future, those who seek to popularize technical education and urge our educational authorities to simulate Teutonic methods, will also make a point of impressing on the public that if good men are produced they will be worthy of a higher wage than the old-time bottle washer and Man Friday.

If we emulate the German teaching system, we must follow it up with the same measure of substantial appreciation that is accorded competent technologists in the Fatherland.

It is true that young foreigners can be had in plenty for a nominal remuneration, but they are almost always probationers. They are seeking to gain experience, and as this is a commodity that has to be bought at a price, they prefer, if possible, to pay for it in kind—by their services—instead of in coin. On the other hand, no one has a greater appreciation of his worth than the comparatively young, but qualified and experienced, foreign chemist. What is more, he almost always succeeds in obtaining the price he sets upon his services.

Now it is practically impossible for his brother chemists in this country to do the same, as long as there is a class of educated people who not only fancy competent chemists are as plentiful as daisies in spring, but advertise for them in the following way:—

WANTED, in a Water Engineer's Office, a Young Man competent to make Analyses of Water, and to fill up his time with other work in office. Salary, 27s. per week.—Address, in own handwriting, stating age and qualifications, and enclosing testimonials.

The salary offered is that of a clerk, who may have spent a few sessions at evening classes, and so be able to do the solids, chlorine, and hardness in waters, but he certainly will not be "competent." He will do the "other work" in the

office mainly, and a little water-testing. If, on the other hand, the number of analyses is sufficient to make the analysis the main occupation, does the advertiser really believe that a young man who has obtained the education necessary to make him a "competent" water analyst will consider 27s. a week a proper reward for his four or six years' special study, especially when he has to suffer the indignity of filling up his time as a kind of senior office-boy?

If this is to be his reward, we are sorry for the embryo chemists and technologists who are fast being caught in the meshes of the technical educationist's net; and we are sorry for the Institute of Chemistry that all its endeavours to raise the status of the analytical profession should have been so futile.

In point of fact, we do not believe that such an advertisement would be considered an honourable or fair offer by the majority of people, but there seems to be a distinct increase in the number of those who think technical education will justify them in seeking to obtain qualified scientists at clerks' wages.

Of course, we shall always have with us the man who is a Ph.D., a C.E., and every other alphabetical selection you can think of, who is an experienced chemist, able to erect works, can manage men, and run every process that is known, or is yet to be made known, and offers all these qualifications for a very "moderate" salary. And in the same way we shall have the gentleman who expects to obtain satisfaction by demanding the above qualifications for a still more "moderate" salary, but every effort should be made to keep both classes on the decline.

It cannot be too strongly impressed upon professional and industrial men that it is degrading to themselves, as well as reprehensible in many other ways, to try and catch a competent analyst for a clerk's wages, because they have not enough analytical work to fill his whole time. On the other hand, we are confident that if a salary sufficient to secure a "competent" man were offered, it would always be found that such men were honourable enough, and willing, to fill up their spare time on something beneficial to their employers, even though it be some kind of office work. At the same time, employers would find that the work done in both their proper and spare-time spheres was performed efficiently. With the clerk-analyst efficiency is a nonentity, and the whole class of educated technologists are henceforth measured by this particular standard.

Lastly, a word to the "competent" young men themselves. Shun such offers as you would shun a mean action. Competent water and other analysts are often wanted at 27s. a week; as far as you are concerned, see that those who seek them are left wanting. Every lapse from this code of ethics is a stab in your own back.

THE RESIN MARKET.—In their monthly resin circular Messrs F. and S. Chiesman and Co., of London and Liverpool, report a decline of prices in the United States for all the grades below H, owing to large receipts of such lower qualities. Large sales for export have, however, also been advised. The demand for "pales" has been inactive, as usual at this time of the year, though supplies have recently been unusually small. The London market is said to be nearly bare of low-grade resins, owing to the delay in the arrival of cargoes due from America. Prices have therefore advanced considerably in that market, and are likely to remain up until the arrival of the supplies. Common Resin is also said to be scarce on the spot, but a large trade has been done for shipment. "Pales" have been firmly held, with a quiet demand. The market in Liverpool has been more settled since the stoppage of cheap steamer rates, but the lower grades have been quoted lower, in sympathy with the drop in America. A large business in these qualities has been done, both in "spot" supplies and "for arrival." "Pales" are firmly held.

Correspondence.

*We do not hold ourselves responsible for the opinions expressed by our correspondents.

BEETROOT GROWING.

(To the Editor of the Chemical Trade Journal.)

SIR,—I shall be glad if you will announce in your next issue that am distributing sugar beetroot seed gratuitously to anyone willing to grow sugar beetroots experimentally next season, and that I will analyse the roots and report thereon free.

The consumption of sugar in the United Kingdom amounts to over one million tons per annum, representing a value of £19,000,000, which all goes to the foreign exporter, and which should be kept in this country if possible. I was closely connected with the experiment of sugar beetroot growing carried on in this country about two or three years ago, and by which it was proved that the roots can be grown here quite as well as, if not better than, on the Continent by such well-known landed proprietors as Lord Rosebery, Lord Winchelsea, and Lord Jersey.

Great Britain, with its large consumption of 78 lbs. of sugar per head per annum, should grow its own sugar, and thus prevent the closing of any more sugar refineries, and also be the means of re-opening the large factories now closed in London, Liverpool, Glasgow, Greenock, Bristol, Plymouth, Manchester, and Dublin.

If gentlemen will send me their names and addresses I will forward the seed to them in time for next spring's sowing, and I shall have great pleasure in aiding, *gratis*, in the formation of any syndicate to erect factories to manufacture the sugar. —Yours, etc.,

SIGMUND STEIN.

323, Vauxhall-road, Liverpool, December 1, 1897.

THE RIVERS COMMITTEE AND THE SEWAGE DIFFICULTY.—A meeting of the Rivers Committee of the Manchester City Council was held on Monday last, the 29th of November. The first business was the election of the chairman and deputy chairman. Sir Bosdin Leech was elected to the former office, and Mr. Saxon deputy chairman. Sir Bosdin Leech, in acknowledging the vote, said he could not at that moment decide whether he would be able to accept the position of chairman. He would take time to consider the matter. The acceptance of the office would add considerably to his labours, and also disturb his connection with the Waterworks Committee, of which he was deputy chairman.—The Lord Mayor, before retiring, expressed hope that the advice of experts would be obtained at the earliest possible moment as a guide for the Committee in their future action. It would be inadvisable to disregard the vote of the citizens upon the culver scheme.

LEAD MINING CUSTOMS IN DERBYSHIRE.—At the Alfreton County Court on Monday, before Judge Smyly, Q.C., an interesting case was heard, bearing upon the Derbyshire lead mining customs. The plaintiff was George Ashbourne Smith, of Crich, who claimed an injunction to restrain Ralph William Poyser, of Crich, from trespassing upon his land and also damages for an alleged trespass in August last. There were two other defendants, but they merely acted on the instructions of Poyser. Mr. Hextall appeared for the plaintiff, and Mr. T. E. Ellison for the defendants.—Mr. Hextall said the case as it stood was pure one of right, and they did not seek vindictive damages. The plaintiff, an old man of eighty, purchased a close of land called The Pingle, 1863, on the road between Crich and South Wingfield. The defendant Poyser owned a piece of land adjoining, and in August last he broke down a fence in order to open a road, with a view of casting material from an old lead mine on to the highway, the road being situated on the plaintiff's property.—It was admitted that the defendant cast material, chiefly spate, left by the old lead miners. In order to do so he reopened an old road made by an order of the Barmaster and grand jury, according to ancient lead-mining customs in Derbyshire.—Mr. Ellison said the defence was founded on the Derbyshire Mining Customs Minerals Courts Act of 1852, which contained some extraordinary provisions repugnant and inconsistent with the common law of England. This was an Act which gave power to anyone with certain districts to enter enclosed land to search for lead ore. The Barmaster and a grand jury of two then staked out their claim, and they were allowed a right of road to and from the mine.—His Honor pointed out that the mine was not now being worked, and he was clearly of opinion that the Barmaster and the grand jury would have again set out the road before it could be used. He, therefore, granted an injunction, but it would be inoperative should the Barmaster again mark out the road for the purpose of mining operations. He assessed the damages at 40s., and granted the plaintiff costs.

The Patent List.

This list is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of E. Davis and Alfred R. Davis, who report professionally the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

ing Liquid Fuel. W. S. Sargeant. 26,583. November 15.
and Apparatus for Disposing of Nightsoil, etc. H. G. Downton
W. H. Nicholls. 26,625. November 15.
Accumulator Plates. P. F. Ribbe. 26,656. November 15.
cture of Enamelled Leather. W. F. Reid and E. J. V. Earle.
7. November 15.
ipping and Washing Apparatus. T. Harrison. 26,695. November 16.
g Antimony Ores. H. R. Angel. 26,706. November 16.
Currents from the Waste Heat of Stoves. H. J. Dowsing.
9. November 16.
rosive Paint, etc. C. J. Grist. 26,800. November 16.
Treatment. W. A. Clark. 26,821. November 16.
Consuming Furnaces. A. Coulthurst. 26,848. November 16.
Calcium Carbide Furnaces. G. W. B. Crees, W. L. Durban, and J.
26,880. November 17.
Calcium Carbide Furnaces. G. W. B. Crees, W. L. Durban, and J.
26,881. November 17.
es for Electrolysis. O. C. and H. H. Strecker. 26,919. November 17.
ysis of Insoluble Salts. O. C. and H. H. Strecker. 26,921. Nov. 17.
ng Protoxides, Hydroxides, etc., from Alkaline Salts with
allic Anodes. O. C. and H. H. Strecker. 26,923. November 17.
g Sewage. G. H. and J. H. Hinchcliffe and H. T. Hirst. 26,929.
ember 18.
g Compounds. J. C. Hamilton. 26,962. November 18.
l Manure from Human Excrements. J. G. Dornig, F. H. Rochlitz,
F. Zeunert. 27,004. November 18.
g, etc., Water. H. McPhail. 27,026. November 18.
ng Dehydroxy-Tartaric Acid. H. J. H. Fenton and E. S. St. Barbe
in. 27,032. November 18.
erates of Alkaline Bleaching Bodies. L. H. Frentz. 27,049.
ember 18.
cture of Burnt Filtering Mass. W. Leuscher. 17,121. November 19.
ytic Saponification Process. A. L. C. Noudon, L. A. Bretonneau,
de Shée. 27,129. November 19.
Accumulators. J. W. Townsend. 27,163. November 19.
ng Chlorine. A. R. Scott. 27,221. November 20.
d Detergents. J. W. Owen. 27,262. November 20.
g Slurry Clay. A. E. Roots. 27,295. November 20.

TRACTS OF LATEST COMPLETE SPECIFICATIONS.

*abstracts are specially prepared for the Chemical Trade Journal,
RIGHTS of publication are RESERVED. This is the earliest
of abstracts of Chemical and allied patents accessible to the*

ments Relating to the Production of Peat-Charcoal and to
atus therefor. E. T. Zohrab, Scottscaldier, Thurso, N.B. Eng. Pat.
1. November 19, 1896.

main object is to produce from peat a charcoal suitable for use
furnaces in the same way as "weathered" charcoal is employed.
re six drawings showing the apparatus used in treating the peat,
e constitute the most important part of the specification. The
first fed by an endless screw into a pulper. It is then thoroughly
and mixed by revolving blades, and forced through perforated
into moulds to form bricks. These bricks are carried by an
belt into a dryer, through which they are borne by travelling
As the bricks fall from one belt to the other they are turned
The volatile products given off in the drying and subsequent
process are collected and may be utilised. The dry bricks are
ced in a charring oven. In order to "weather" the charcoal
o produced, a current of dry air is drawn through the dryer in
site direction to which the bricks are passing. The charring
a feature of the patent, having special facilities for preventing
ating.

roved Process of and Apparatus for Ageing Whiskey and
Alcoholic Liquors. D. J. Ely and C. R. Long, both of Louisville,
cky, U.S.A. Eng. Pat. 18,713. August 12, 1897.

well known that the best way of ageing spirituous liquors is by
ly raising and lowering the temperature in a charred barrel.
this is done in a natural way, however, it has been found that
red end is seldom attained. It is claimed for the present
hat nature is simulated by producing heat and cold in a vessel
ich the air is excluded, but as the temperatures are at extremes
sary alternations can be made easily and controlled according
requirements of the liquor. There are six figures illustrating
atus used. The essential feature is a column of water enclosed
that passes air-tight through the bung-hole. This water can
d to 145° or 150°F., or cooled by converting the water into

brine, which is cooled by an ammonia or other refrigerating apparatus.
It is important that the barrel be perfectly closed. Raw spirit treated
by this process will, it is claimed, closely resemble two-year-old
whiskey after treatment for five days.

Improvements in the Manufacture of Electric Accumulators, or
Secondary Batteries. L. Lucas, 37, Carl Strasse, Hagen, Westphalia.
Eng. Pat. 28,511. December 12, 1896.

The use of perchloric and sulphuric acids, or their salts, constitutes
the chief point of this invention. The positive pole when treated with
these acids becomes coated with a firmly-adhering layer of peroxide of
lead, hydrogen escaping from the negative pole. The advantage of
perchloric acid over other chlorine compounds lies in the fact that no
chlorine gas is liberated by electrolysis, and so the solution can be
used over and over again. In practice a sufficient quantity of per-
chlorate salt, such as that of potassium sodium or calcium, is mixed
with the sulphuric acid so as to yield 5 to 10 grams of free perchloric
acid.

Improvements in the Manufacture and Production of Dry Soap or
Soap Powder. F. W. Wright and The United Alkali Co., Ltd., both of
G11, Exchange-buildings, Liverpool. Eng. Pat. 27,906. December 6, 1896.

When crude bicarbonate of soda, obtained in the ammonia-soda
process, is heated to recover the ammonia, "roaster ash" is produced.
This mixed direct with soap and water forms an excellent, finely-
divided soap powder, free from caustic properties, and lathering well.
The ordinary grinding and dressing is sufficient to produce such a
product. Convenient proportions are 60 to 65 parts by weight of
"roaster ash," to 20 of soap and 10 to 15 parts of water. It is prefer-
able to mix the soap and a third of the ash into a paste with the water,
and gradually add the other two-thirds of the ash to dry the mass.

Reports of Companies.

LONDON NITRATE COMPANY, LIMITED.

THE annual meeting of this Company was held on Friday, last week,
at the Common Hall, Hackins Hey, Liverpool, Mr. F. Tobin
(chairman of the Company) presiding. The Directors' report stated
that the past year had not been as favourable as former ones, the profit
on trading, after deducting depreciations, being £13,722. (*vide C.T.J.*
549, p. 341). The Chairman, in moving the adoption of the report,
said the past year had been one full of anxiety for those connected with
the nitrate industry. As they were doubtless aware, the combination
formed a few years ago by nitrate producers for the purpose of restrict-
ing the production and maintaining remunerative prices came to an end
in October last. The shadow of that coming event was undoubtedly
cast over the market for many months previous to that, and throughout
the year they had to face steadily declining prices. Under these cir-
cumstances, the great danger for a company was of being caught with
a large stock of unsold nitrate, but he was glad to think that the
directors had avoided that danger, and had persistently met the market
by selling their nitrate as it was made. It was only through their
having pursued such a policy that they were able to lay before the
shareholders the figures shown in the accounts, figures which he
thought must be considered satisfactory when compared with those
appearing in the reports of other companies. With reference to the
policy they intended to pursue in the future, he said that, seeing they
could still make a profit on their manufacture, the directors had
decided to continue working and meet the market by sales as the
nitrate was produced. Of course circumstances might arise which would
necessitate a modification of that policy, but for the present that was
the line they intended to pursue. Mr. Reynolds seconded the motion,
and the report was adopted. The Chairman moved that a dividend of
4 per cent. be paid on the preference shares for the past year. Mr.
Ingilis seconded, and the motion was adopted.

DIVIDENDS.

THE CAPE COPPER COMPANY, LIMITED.—The directors have
declared a dividend of 6s. 6d. per share, making with the interim
dividend, paid in July, 9s. per share for the year on the cumulative
preference and ordinary shares, free of tax, payable on January 1st.

CLEVELAND SALT COMPANY.—At the recent annual meeting of the
Cleveland Salt Company, Colonel Davies presided, and, in moving the
adoption of the report, said that the demand for salt had again been
below the producing power of the Company, and before the summer
season commenced it was considered advisable to work only half the
pans for about three months. The plant both at Middlesbrough and
South Bank had been efficiently maintained. The amount of profit
available for distribution was £3,287., and the directors recommended
the payment of dividends of 6 per cent. on the preference and deferred
shares. The report was adopted.

SOCIETY OF CHEMICAL INDUSTRY.

NOTTINGHAM SECTION.

THE second sessional meeting of the above section took place on Nov. 24th at University College, Nottingham, when there was a fair attendance. Amongst the members present were Dr. Clowes (president of the society), Dr. Sudborough, and Messrs. Adams, Carulla, Caven, Golding, Pentecost, Ward, and others. The chairman, Mr. James O'Sullivan, read a paper on "The Unorganised Ferments or Enzymes concerned in the Brewing and Distilling Industries." The subject was introduced by showing the distinction that exists between the digestion in highly organised animals—which is entirely external, as the alimentary canal is simply a continuation of the external skin—and the interstitial digestion, which is that generally observed in the vegetable kingdom. The varied food consumed by man requires for its digestion seven or eight soluble ferments or enzymes. Similar ferments are concerned in the production of brewers' and distillers' wort. One enzyme is obtained from barley—namely, diastase of translocation, which does not erode starch granules or liquefy starch paste, but dissolves "soluble starch." From germinated barley or malt two enzymes are derived—namely (1), *cytase*, which dissolves cellular matter and is rendered inactive on heating, therefore is not present to any extent in kiln-dried malt; and (2) *diastase of secretion*, which liquefies and hydrolyses starch paste at all temperatures up to 80° C. The author then explained the difference between the requirements of the brewer and those of the distiller, and concluded by saying that he had given no analyses, as there were reasons for believing that we did not know yet with certainty the composition of these most important products of life.

Dr. Sudborough said he had noted with much interest how often the chairman had quoted English and, as a rule, Burton chemists as authorities. Two diastases had been mentioned having different properties. It seemed a matter for regret that two evidently distinct substances should have the same name. Wroblewski had recently shown that the ordinary diastase of malt could be separated into two different compounds.

After some complimentary remarks by the President (Mr. Clowes), Mr. O'Sullivan replied that it certainly was objectionable for the two diastases to have the same name. Fischer must have felt this when he called one beer yeast glucose. It was also desirable to always mention the source of origin, and say, for instance, "barley diastase" or "maize diastase." In regard to the composition of diastase, it had been known for some time that it contains an albuminoid and a carbohydrate.

A hearty vote of thanks was accorded to the chairman for his valuable paper.

HANDY CONDENSERS.

Mr. Feilmann then described a new form of condenser which had been devised by Dr. Sudborough and himself. The condensation occurring on the outside of the ordinary reflux glass condenser tended to collect and run down, sometimes causing much trouble. This had led them to reverse the arrangement, and instead of admitting the cold water into the annular space they made it pass through the inner tube and used the annular space for the vapour to be condensed. Of course, they did not claim any novelty of principle, as it was precisely the same as that of the Soxhlet condenser. For either they had found the new arrangement a decided improvement.

Mr. John Golding described a very simple arrangement he had seen at Copenhagen, where 50 condensers were at work at the same time, in two sets of 25. The closed condenser may be described as a long metal cylinder, the top end having a projecting cover, to which the water admission and exit tube are attached. A long piece of wide combustion tube is drawn out to fit the cork of the ether flask. The oil cake to be extracted is placed in the tube and the condenser is introduced, the projecting cover allowing it to rest on the brim of the tube. Mr. Golding thought this a very cheap arrangement, and it was most efficient, as he could not detect any smell of ether.

The Chairman, Mr. Ward, Mr. Trueman, and others joined in a discussion, after which the meeting terminated.

SCOTTISH SECTION.

The second meeting of the session was held on Monday, November 29th, in the Public Hall, Broxburn. This marks quite a new feature in the manner of transacting the business of the Scottish section of the society. Hitherto its meetings have been confined to Glasgow and Edinburgh in about alternate rotation; but the council decided, as an experiment, to try the system of holding meetings at special industrial centres, the choice of these to be dictated by the character of the lectures or papers promised. The opening papers of the session have borne closely on the mineral oil and paraffin industry, and Broxburn has appropriately enough been chosen for the first of these district gatherings. This town is on the line of the most direct of the three main turnpikes which connect Edinburgh and Glasgow, and distant

about 12 miles from the former and 30 miles from the latter. It is, so to speak, the "metropolis" of the Scottish mineral oil manufacture, and from the condition of a mere roadside hamlet forty years ago, it has grown to that of a burgh of 10,000 inhabitants or more, and is now the most populous town in the county of West Lothian. The chief works of the Broxburn Oil Company are here; but within comparatively short distances are found those of Young, the Pumpherston, Holmes, Dalmeny, Linlithgow, and other companies. In this field all are more or less concerned in the shale mineral distillation and refining, and it is not surprising, therefore, that—although in the country—the Broxburn meeting turned out to be about the largest on record. Over 200 were present, a number of these being non-members, or course, but specially invited for the occasion. Mr. G. T. Beilby, chairman of the section, presided. Mr. N. M. Henderson, works manager of the Broxburn Company, and Mr. Bryson, of the Pumpherston Company, each contributed a paper on the evolution of the shale retort, the first describing the different sorts tentatively used at the Broxburn works during the last thirty years, beginning with the ancient horizontal and vertical conceptions and coming down to his own latest improvement now at work. Mr. Bryson's paper dealt chiefly with the working of the new retorts at Seafield, the special features claimed for which are their cylindrical shape, largely increased capacity, continuous discharging, and other qualities, these working out a further saving of about 1s. 10d. for every ton put through. Mr. A. H. Crichton, of the Philipstown Company, likewise described those he now uses there, stating that they were partly of the Young and Beilby type, partly Henderson's, with some original ideas of his own added thereto. Discussion on the general retort question ensued; and promising to be of high interest, and to cover some considerable field, it was adjourned to the next recurring opportunity.

Mr. J. M. Johnston (Young's) then spoke of the methods in use for determining in the laboratory the amount of sulphate of ammonia obtainable in the works from a given sample of shale, at the same time desirating the adoption of a common standard by all the makers. He was followed in this interesting subject by various practical members, including the chairman, who, in closing, moved for the appointment of a committee to investigate and report on this particular point. This was agreed to, the gentlemen chosen being Messrs. Johnston (Young's), Stewart (Broxburn), Bailey (Pumpherston), and Gray (Clippens). Mr. Fyfe, general manager of Young's Company, brought this very successful meeting to a close by a short but very appropriate address on matters connected with the industry generally, and awards of thanks were carried unanimously to the chief speakers and to the chairman.

MANCHESTER SEWAGE PROSECUTION.

FURTHER EXTENSION OF TIME.

AT the Manchester County Police Court on Friday last week, before Mr. J. M. Yates, Q.C., the stipendiary magistrate, Mr. George Rhodes, on behalf of the Manchester Corporation, applied for an extension of time in regard to the carrying out of a scheme for sewage disposal. Mr. W. H. Wilson, deputy clerk to the Mersey and Irwell Joint Committee, represented that body. The Town Clerk (Mr. W. H. Talbot) and the City Surveyor (Mr. Meade) were present.

Mr. Rhodes explained the present position of the Corporation. On the rejection by the ratepayers of the culvert scheme, the Rivers Committee of the City Council resigned in a body, and a new committee had been appointed. This Committee consisted mostly of new members, and had not yet been able to get to work. The Corporation felt the importance of this matter, and they did not mean to dally with it, but time was certainly wanted in which the Committee might determine on a new course. In arriving at a decision, there would be no unnecessary delay. He had thought of asking for an extension of twelve months, and had suggested that period to Mr. Wilson. That gentleman thought, however, that six months would be reasonable, and to that the Corporation would agree.

Mr. Yates asked when the original proposal was made.

Mr. Rhodes replied that it was made in September, 1896. At that time the scheme propounded, which they got twelve months' time to carry out, was practically the same scheme that they meant to ask Parliament to sanction more recently. The ratepayers rejected the amended proposal to turn the effluent into the Ship Canal at Woolston Weir, and they reverted to the original proposal, and that also had been rejected.

Mr. Yates: You are in this position; the Local Government Board say they will have land filtration, and you are endeavouring to get out of it.

Mr. Rhodes said that was so. They had not the land, and it would be difficult to get it. But the Local Government Board were reconsidering this matter, and it was possible that by the end of six months they might have changed their attitude. In that case, the Corporation might be able to present a scheme which the Court could approve and

The Corporation carry out. At any rate, the Corporation could do something in the six months. They could formulate their plans, and have something definite to which they could ask the Court's consent.

Mr. Yates said that would eat into another summer.

Mr. Rhodes said that six months was the shortest time they could ask for. Meantime they would go on with chemical precipitation and with filtration as at present.

Mr. Yates: You are dealing with a third of the sewage.

Mr. Rhodes said more than that. He was informed that the whole of the sewage was being treated at the works except so far as regarded 30,000 inhabitants, so that they had made great strides in the last twelve months.

Mr. Wilson said he was instructed to consent to further reasonable time being granted to the Corporation, and that time was put at six months. But he was also instructed to ask whether the Court did not think that the time had come for the Corporation definitely to do something in the period allowed.

Mr. Yates thought it could hardly take six months to arrive at a decision. The Corporation had the best scientific and engineering advice.

Mr. Rhodes said that new experts might be called in by the new Committee.

Mr. Yates remarked that summer was coming, and one would like to know that something was being done to sweeten the river. He had read in the papers the accounts of what had been going on during the last twelve months in Manchester. He quite felt the difficulty in which Manchester had been placed, and he equally felt for the position of the Mersey and Irwell Joint Committee, a representative body with a very important duty imposed on it with regard to the purification of the Irwell and its tributaries. He had to bear in mind also the fact that the Court made an order fourteen months ago, upon terms agreed upon, the object of which was the purification of the sewage of Manchester. It appeared to him that unless something was done the order of the Court was a mere foolish order. The Court stultified itself by repeated adjournments, when it was found that, after each adjournment, they were no nearer to the conclusion of the whole matter. Now, on the one hand, the Corporation asked that there should be a simple adjournment for six months, without any undertaking on their part. Mr. Wilson, on the other hand, wanted conditions imposed as in the case of Salford. He had to remember that though the amount of money Manchester might have to spend was very large, the wealth of Manchester was very great, and the pressure, if they looked the matter in the face, did not hit them so seriously as it had done other boroughs, who had had to do their best to meet their difficulties. The trouble was that Manchester did not want land filtration, and that the Local Government Board said they must have it. So the time already given had been, he would not say wasted, but had been spent in an endeavour by the Corporation to see if they could not get round the Local Government Board in some way or other, and up to now the Corporation had not succeeded. The question now came as to what was to be done. Manchester had a new Rivers Committee, a committee with no pre-conceived ideas, he hoped, with regard to sewage disposal. The Committee were probably prepared to look the matter fairly in the face, and to deal with it in a way in which a large body like the Corporation should deal with it. Under these circumstances, he thought the best course to pursue was to adjourn the matter till the 25th March next, without conditions. Then the Court (so far as he was concerned) would expect from the Corporation some scheme that they could carry out, and some scheme that would deal with the sewage in a way that was satisfactory to the Joint Committee.

THE CYANIDE PROCESS PATENT.—The purchase of the cyanide patent by the Government of New Zealand for £15,000. is regarded as a significant circumstance. The process of cyaniding is yet only in its infancy, though at one time it was reported that the royalties paid by users of the process, principally in South Africa, amounted to £1,000. daily. In Victoria and New Zealand, a wide field of usefulness has been opened up for it in the treatment of heaps of tailings hitherto believed to be valueless, and even in South Australia great accumulations of battery sand are being forced to yield up much of the gold which escaped the plates in the palmy days of gold-mining properties.

RAILS AND ACCESSORIES.—This is the title of a neatly put together pamphlet (price 1s.), prepared by Mr. T. W. Ward, Fitzalan Chambers, Sheffield. It is excellently printed in the now much copied De Vigne style. It contains hints for those who have need to put down small sidings and works' railways. With the exception of the tables at the end there is nothing very new or novel, but the facts, though familiar, are well expressed and illustrated by a few neat diagrams. There are two model estimates for quarter of a mile of rails that will be useful as a guide to those having had no experience in such matters. It is likely to be of use to small brick works, collieries, iron mines, limestone and other quarries, to owners of which we can commend it.

Selected Correspondence.

ALLEGED DANGERS OF CELLULOSE.

(To the Editor of the Birmingham Daily Post.)

SIR,—In articles dealing with the recent great fire in London, some references have been made to the inflammability of the substance known under various names, but chiefly in this country as celluloid or xylonite. As one who was for many years closely associated with the manufacture, as manager of large works on the Continent, though now in quite a different line of business, I should like to explain what celluloid really is, and to correct some false impressions that are current in regard to it. In the first place it is not correct to describe its base as gun cotton. True, it is made from cotton or other form of pure cellulose, but chiefly now, however, from a specially-prepared paper; but the strengths of the acids employed are weaker than those used in the manufacture of that highly explosive substance, gun cotton. What is produced by the action of the weaker acids is dinitro-cellulose, otherwise known as pyroxiline. This, then, is the base of celluloid, and ought not to be confounded with the explosive known as gun cotton, to make which considerably stronger acids are employed. This pyroxiline is treated with certain solvents which further reduce its inflammability, and when dried it becomes the horny substance so well known, which is seen in such variety of forms exposed for sale everywhere. While not denying that it burns rapidly, I have only seen it in flame when in contact with fire, and I have had to do with hundreds of tons of it in all forms. It is quite impossible, for instance, that billiard balls made of celluloid could "fire" when struck in any manner whatever; and as for combs worn in the hair catching fire, the hair would certainly burn before the comb. In the manufacture of articles from celluloid it is necessary to subject the material to moulding in hydraulic presses at a very high temperature, also to sawing, planing, turning on lathes, soaking in boiling water, etc.—processes which could not be followed were we to believe the often ridiculous stories we hear from time to time. My own opinion is that there is no danger in the using or storing of celluloid unless in actual case of fire; and about how many other things may we not say the same? I may add that, being now engaged in quite another business, and not in any way interested in celluloid, I have given only my candid opinion.

WALTER HOGGEN.

SUGAR-BEET GROWING.

(To the Editor of the Birmingham Daily Post.)

SIR,—Will you allow me to draw attention through your columns to the conditions of the prizes I have offered for sugar-beet growing in Warwickshire in 1898? 1st, that I will supply the best French and German seed (probably Vilmorin's Improved or Klein Wanzleben); 2nd, that the number of experiments is limited to 50; 3rd, that the beet be grown within the county of Warwick; 4th, that I shall require a certain number of roots for the purpose of exhibition and analysis; 5th, that the judges will consider the saccharine properties and the size and weight of the roots; 6th, that a first prize of £5. and a second prize of £2. 10s. will be given to the best exhibits.

Application for seed should be made to me by letter before January 1st, and, should there be more than 50 applicants, I will ask some independent friend to select the requisite number. In the meantime, the small portion of ground destined for the seed should be well worked with farm-yard manure. The plant has a long single-tapered root and roots deep. I am hoping that this simple plan of determining a great national question—viz., whether Great Britain may not share in the sugar production of the world—may be followed in other countries also.

VICTOR MILWARD.

The Holloway, Redditch, Nov. 25th.

SALISBURY AND ITS WATER SUPPLY.—The Salisbury Sanitary Authority have submitted to the public analyst samples of the water supplied to the inhabitants by the corporation. He reports that the reservoir is quite clean and the supply of the city generally is good. The sample of water taken in the Close is reported as fairly satisfactory, but as to the Wyndham-park district the sample submitted was contaminated with putrid animal matter, and the analyst recommended the immediate cutting off of the supply. The contamination is believed to be due to defective household fittings making possible a communication between the soil pipes and the water services. Accordingly, recently the sanitary authority cut off the supply from all houses having these defective fittings, and until proper fittings are substituted the tenants of the houses will have to get their water from standpipes which are fixed in the roadway.

THE SEPTIC SEWAGE SYSTEM.

INQUIRY AT EXETER.

AN inquiry extending over three days was held at Exeter last week by General Crozier, R.E., and Dr. Thompson, on behalf of the Local Government Board, into the application by the Exeter City Council to borrow £40,000. for sewerage works and sewage disposal on the septic tank system devised by Mr. D. Cameron, the city surveyor. There was a large representative attendance of municipal officers, and also of sanitary engineers from the Southern and Eastern Counties, Wales, London, and Manchester.

The Town Clerk in opening the inquiry said this was an application from the Council of the city of Exeter for leave to borrow £40,000. for sewerage and the disposal of sewage, and the sum was divided under these heads: The cost of constructing the intercepting sewers, including flushing tanks, £14,242. 1s. 8d.; the construction of outfall works, £14,640; irrigation, £600.; purchase of land, £6,500.; contingencies, £4,017. The sewage was brought to one point to the south of the city at Belleisle and Evesleigh, of an area of close upon nine acres, and it was there dealt with by what was called the septic system, which had now been on trial for two years. As the system constituted an entirely new departure in the treatment of sewage, the Council, when it was first produced to them, although satisfied that good results could be obtained, tried a small experiment, which took in one-third of the sewage of St. Leonard's. That turned out so satisfactory that at the end of six months works were constructed for the purpose of dealing with the whole of the sewage of that particular district, and these were brought into use in the middle of August, 1896, since when they had been in full operation with most gratifying success. Mr. Shorto then explained the process through which the sewage went until it was discharged in a clear state fit to be carried into the river, or deposited over land without giving any offence. The Local Government Board stated some time ago that they would require treatment on land to be a part of any scheme devised. The Council, therefore, proposed to acquire twenty acres of land, and deal with the effluent by irrigation. Sixteen acres of this land would be a natural filter. The effluent would finally flow off into the tidal part of the river. This course was adopted by way of an assurance against any chance nuisance, but he thought it would be shown that no reasonable fear could exist as to any nuisance arising from a discharge into the river direct. As a proof of the inoffensive character of the process the Town Clerk mentioned that the works had been in action close to a public path where many people passed, and not a single complaint had reached the council of any objectionable smell proceeding from the spot, and the same thing had been testified to by those who had visited the place. Another recommendation of the plan was that it required no constant expense, as the tanks were automatic in their action, could be left to themselves, sure in their operation, and efficient with regard to the results obtained.

Mr. Cameron, the City Surveyor, then described the process in detail. Replying to Dr. Thompson, the Surveyor said the sewage with a dry water flow would remain in the tank 45 hours, and with a quarter-of-an-inch rainfall it would remain 7½ hours. If there was half-an-inch rainfall the surplus would be carried over storm overflows into the river.

General Crozier questioned the surveyor as to the action of the grit chambers, asking why they only caught the road detritus and not any sludge.—Mr. Cameron said that was the result of their peculiar construction.

It was pointed out by General Crozier that by the scheme, any overflow from the sewers could be turned at the will of those in charge of the works into the river, without first going over the land, and he did not think the Department would consent to that.

In reply to Dr. Thompson, the Surveyor said the sewage of Exeter was mainly domestic. The only trade factories were two paper mills, one tannery, and two breweries. The quantity of waste water discharged at the factories would be very small indeed.

Dr. Sims Woodhead, of Edinburgh, an expert, said he had examined the experimental works, and had taken samples of the deposit and effluent, whilst others had been forwarded to them. He found a very marked change in the composition of the sewage, and those changes were associated with the processes of decomposition, not of putrefaction. The sewage as it came to the tank contained quantities of organic matter, and the solids were brought into solution. This had always been a great difficulty in other schemes, as in the case of a sewage farm, where the solid matter was liable to lay on the surface and choke the land. In the tank provided in this case, the difficulty of breaking down and getting rid of fæces so as to bring the constituents into solution was to a large extent overcome.

Philip Armitage, engineer at Yeovil, said they had an experimental plant on the septic system in that borough. It was constructed on exactly the same lines as the works at Exeter. They dealt with 20,000 gallons of sewage a day. It was an exceedingly foul sewage, containing a great amount of trade refuse. There were three filters, but these were only three feet deep, and were composed of broken coke reduced to a size which would pass through a sieve with a minimum of three-quarters of an inch and a maximum of an inch and a half. Two

grit chambers were used, and these had been twice emptied, the deposit being found to consist of road detritus and sand. The Corporation considered the result satisfactory so far as the disposal of the sludge was concerned; but they were not satisfied with the effluent according to the present mode of dealing with it. The filters were capable of receiving 120 gallons per yard.

By General Crozier: The patentees prepared the design, and it was carried out according to their directions, with the exception of the filter beds, the material for which was not so fine as they would have liked.

An analysis by Mr. Naylor, made for the Somerset County Council was produced. Colonel Crozier said they had also received an analysis by Professor Voelckler, which was not altogether favourable.

Mr. A. J. Martyn, assistant to Mr. Cameron, said he had had charge of these experimental works, and was present when the samples of sewage, etc., were taken. Before any were taken a conference was held between Mr. Cameron, the chemist, and himself, as to the best method to be adopted. As to the sewage and the tank effluent, it was decided that samples should be taken hourly for 24 hours in proportion to the quantity of sewage flowing through the tank. These samples were mixed together in a carboy, and a sample of this was taken.

General Crozier: Did you take the same quantity each hour?—No, according to the flow. It would be at the rate of 10 c.c. per gallon. In taking the effluent they waited for the sewage of which they had taken samples to reappear in its liquid form.

Dr. Thompson: How could you identify it?—We could not, of course, identify it, but from experiments made we were able to estimate the time. A different principle had been adopted in the case of the samples from the filters, as the flow through them varied. Five samples were taken at unequal intervals, and these were mixed together to give an average sample of the discharge. He had conducted some experiments to test whether there was any streaming of the sewage through the tank. There was no such streaming; there was always a diffusion going on that rendered the constitution of the effluent approximately uniform. The experiments he made were all in dry weather.

Dr. Thompson: If there was any streaming, would it not be more likely to occur in wet weather?—It would be more likely, but his opinion is that there would be no such tendency in wet weather. This opinion was confirmed by the result of the analysis of samples taken in wet weather.

In reply to the Town Clerk, Mr. Martin said he was present when Dr. Pilkington, from Preston, took samples at the works. The samples were all taken at one time. It was a single unaveraged sample and at the time it was raining heavily.

By General Crozier: The sample of filtered sewage was taken as it was slowly trickling, and he pointed out to Dr. Pilkington that it was not a fair sample. He asked when the filter would discharge, and said he would wait and take a sample then. His impression was that as, in order to get this, he would have to empty one of the three bottles he had already filled, Dr. Pilkington must have thrown away the wrong one. No two of the samples taken could be comparable.

Dr. Dupre, of the Medical Schools, Westminster, and a lecturer on chemistry for 23 years, stated that he had made a thorough examination of the Belle Isle Works, at Exeter, his experiments lasting over several days. He was responsible for the method of taking samples described by Mr. Martyn, and he considered it the best for getting accurate results, and much better than taking single samples at one time. The purification in the septic tank, if necessary, took place much more readily and to a greater extent than in any other chemical system. In the tank the main change effected was in the direction of a notable reduction in carbon compounds. There was also a noticeable disappearance in the smells. When the effluent from the filters was shaken up in a bottle a faint smell of sewage was perceptible, but it rapidly disappeared. The filtrate could certainly be discharged into a river without injury to health, and would not in any way cause a nuisance. The process of purification at present being experimented at Belle Isle could be extended, so as to deal with the whole of the sewage of Exeter by a proportionate increase in the plant, and the filter effluent could be discharged into the Exe without the slightest fear of causing any nuisance, either at the point of discharge or at any other point of the river lower down. He had never seen better effluents obtained from any other system. The works at Belle Isle were also more completely under control than any sewage farm could be, and was practically independent of seasons and rainfall. Neither was there anything in the trade refuse of the city which would prevent it from working satisfactorily. The septic system could be worked in any place where it would be practicable to adopt a sewage farm; what would interfere with one would interrupt the other.

By Dr. Thompson: Seven hours, which had been spoken of as a time when the sewage might pass through the tank under certain conditions, might not be enough for the full action of the system, unless it was fully started. The tanks required to be cleared out and re-filled, but when once fairly started the system could be made to work efficiently for seven hours.

In reply to Mr. C. R. M. Clapp: Do not believe any nuisance would be caused if Belle Isle should, by reason of a flood, become waterlogged.

Mr. W. W. Tremlett, one of the owners of Head Weir Paper Mills, said they manufactured at his works a high-class brown paper from rope, sacking, and kindred material. They did not do any bleaching. The rope and sacking were put into a boiler into which they put lime, and sometimes soda ash. About 35lb. of soda ash was used per day, and about three or four times as much lime. The waste chemical liquor was used over again after being pumped into a cylinder. It was continually used, and never passed into the river. All that passed into the river was the condensed water from the engines, the dirty water resulting from the washing of the material used in the making of the paper, and a small waste of water from the pressing. Everything was done in the making of paper to prevent loss of weight.

Dr. Rideal, Westminster, said he had not examined the paper mills, as from inquiries he came to the conclusion that no deleterious discharge went into the river. The only objectionable element would come from the bleaching process, and no bleaching was done here nothing injurious to the septic system from the discharge. He had inspected the soap works, and was informed that half a ton of acid liquor was used a day.

Dr. Thompson: Of what strength is it?—It is a very weak sulphuric acid. There would be one part of weak acid to ten thousand as compared with the sewerage of Exeter, and could not possibly have any effect upon organisms.

Mr. W. J. Dibdin, F.I.C., stated that he had for the last twenty years paid great attention to the treatment of sewage, and with Dr. Dupre devised the London sewage disposal scheme. He had devoted considerable study to the bacteriological treatment of sewage, and had made a careful examination of the septic tank processes at Exeter and Yeovil, and had carried out experiments with the system in the laboratory, as well as most careful analysis. Several of the samples were taken during April, when the weather was wet and unsettled, and there was twice the amount of the discharge of an ordinary discharge of a dry weather flow. The general conclusion he came to was that there was no marked variation of temperature through the increased flow. The results of his analysis bore out his opinions upon the bacteriological treatment of sewage, in closed vessels such as the septic tank. One important fact was that in this system the whole of the solid matter, which under other treatment would create a sludge and become a nuisance, was destroyed by microbic action. Instead of having quantities of sludge, they had nothing but a fine soot or grit. That was an important point which should be borne in mind. The second point was the very large percentage of reduction of impurities in the dissolving of the sewage. It might be put down at 70 or 80 per cent. From the tank and the filters there was a total purification of 90 per cent. The third point was that the character of the organic matter left in solution was entirely altered. As to the condition of the filtrates, the bulk was not brilliant, but the latter discharge was decidedly brilliant, and he saw no reason why the earlier filtrates should not be made to give a thoroughly brilliant effluent. The effluent was good, but as to the quality of these things people were nowadays very hypercritical.

The Town Clerk: Would you discharge the effluent into a tidal river or a running stream?—I have discharged effluents of the character into a dry ditch, and the water below has been drunk by cattle without having had the slightest effect.

Did you see the grit intercepting chambers:—Yes. I found they contained a very hard deposit of sand, and could not affect the efficacy of the tank by obstructing the flow of sewage. The grit could be removed easily at any time.

Summarising the general result, what is your opinion as to the system?—I have no hesitation in saying the system of the biological treatment of sewage is far preferable to any other system they now had.

Questioned as to the Yeovil Works, he said so far as the septic was concerned, there was no difference between those works and Exeter's, but the filtrate was not so good, and the filters not so well worked as at Exeter. The principle to be adopted was to charge the filters as quickly as possible and draw off the effluent as slowly as could be. At Yeovil they had done exactly the reverse. Even at Exeter they might do better by choking the outlet more, and decreasing the rate of discharge. The defects at Yeovil had nothing to do with the biological process.

Dr. Rideal in his evidence dealt with Mr. Naylor's analysis made for the Somerset County Council. Dr. Rideal said the samples examined could not possibly, from the results obtained, have been comparable. With regard to Dr. Voelcker's analysis on the samples taken by Dr. Pilkington from the Exeter tanks, he thought the samples must have got mixed, as no one ever heard of 85 grains of nitric acid being found in raw sewage. Ignoring the analysis of the raw sewage, the return with regard to the effluent and the filtrate was very good. He had never known of anyone, saving Dr. Voelcker, finding suspended matter in the samples taken from the filters at Belle Isle.

Dr. Thompson: A certain amount of solids would pass through with the tank effluent.

Dr. Rideal: There may be a little suspended matter, but I have never seen what I call solids in the effluent. I have never made any special observation.

Mr. F. P. Perkins, public analyst for Exeter, deposed to taking numerous samples of the sewage effluent and from the filters at Belle Isle. The average amount of chlorine on November 3rd, was 5.68, and the day after it was 6.17. Twelve determinations of oxygen absorbed, gave an average purification of the filtrate as compared with the crude effluent of 72.53. The highest purification as shown by a single determination was 82.04, showing that when the system was at its best there was an immense improvement on the raw sewage. The samples were generally of good appearance, and as regards colour, compared favourably with any standard introduced. They were also odourless, and their keeping power was excellent. The discharge was quite fit to be turned into the river.

In answer to Dr. Thompson, witness said in judging whether the liquid was fit to be discharged into the river he would be guided by the proportion of albuminoid ammonia to nitrates, but he would have no fixed standard. A small quantity of suspended matter in the effluent would not make any difference. There was a fair amount of suspended matter in the tank effluent. He did not think the tank effluent from a dry weather flow should go straight into the river, but in the case of a storm weather flow it might do so. He would be prepared to discharge tank effluent into the river at any period at Belle Isle or any point below Exeter. The crude sewage could be discharged into the river at that point.

Mr. Thudicum said he had made precipitation a point of special study, and had carried out experiments on a large scale. With regard to the discharge of suspended matter with the effluent, if any, the proportion of organic matter which would come out in the solids would be practically the same as when it entered the tank, and in fact a little more, but the nature of the organic matter would be different. It would have been so acted upon by the bacterial treatment as to make it more readily dealt with by after influences. He did not think it would make any difference in the precipitation in the Exeter tanks whether the sewage was under treatment for seven or forty hours. With regard to filters, provided area was of no consequence, he would soon have one of 3 ft. as 5 ft. 6 in. deep. From experiments he made, practically the same results were obtained. The chief consideration was the cubic capacity, and if there was the space at disposal he would recommend filters of a depth of from 3 ft. to 3 ft. 6 in. deep. He had made experiments with regard to the effect of the rainfall upon the treatment of sewage in the septic tank. Although the quality of the sewage and the tank effluent varied with the rainfall, and consequently with the flow into the tank, the quality of the filtrate remained constant.

After further testimony from the Devon County Council and certain other local authorities the inquiry closed.

ARC LIGHT AND EYESIGHT.

ONE effect of the advent of the X ray has been to direct closer attention to the influence of the electric light on the eyesight. It has recently been stated that sailors suffer much in their eyesight from the brilliant electric lights used on shipboard. Gray and blue eyes are the most subject to injury, not being heavily charged with pigments. The men who work the searchlights already wear dark-blue glasses, but it is found that these only mitigate the intensity of the light, and do not absorb the source of the trouble, the ultra-violet rays. These rays, however, can be intercepted by goggles or screens of uranium, on yellow glass, and with these, it is understood the sailors of the French Navy are soon to be provided. Another interesting case bearing on this subject is reported from a British warship. It seems that two stokers on the ship, having a little spare time, became engrossed in the operation of an electric drill, which was burning out holes in a hardened steelplate. Both men declared they only watched the arc for about three minutes, and at the time felt no ill-effects, except that all objects appeared to be of a deep gold colour. At night, however, both men were aroused by intense pain and partial blindness for the time being, but both recovered quickly after treatment. The electric drill acts by fusing a hole through the steel, and the intensity of the light is greatly increased by the rays of light thrown off by the molten metal. The fact, too, that the work is carried on chiefly in the daylight is apt to deceive the casual onlooker as to the degree of brilliancy of the light, and it is not until the after effects begin to assert themselves that he is aware of anything out of the common. Dark glasses are now used by all the men on the electric drilling shifts. A singular feature of this affection is that it is analogous to snow or desert blindness, and, as in them, the pernicious effects of the electric-light are probably due to the ultra-violet rays of the spectrum.

Legal Intelligence.

HOUSE OF LORDS.

(Before the Lord Chancellor, Lord Herschell, Lord Macnaghten, Lord Morris, Lord Shand, and Lord Davey).

DADISCHE ANILIN UND SODA FABRIK v. BASLE CHEMICAL WORKS BINDSCHEDLER.

This was an appeal against a judgment of the Court of Appeal in an action which the appellants brought to restrain the respondents from importing or bringing into England and from manufacturing or selling in England certain dyes or colouring matters made according to an invention which had been patented by the appellants in this country. The appellants also sought the usual ancillary relief of damages and an account of profits. The appellants are large manufacturers of dyes and colouring matters, and are the owners of various patents, among them one for an invention of "Improvements in the manufacture of yellow and orange colouring matters suitable for dyeing and printing from dioxy tartaric (carboxy tartronic) acid." The dye is sold in the market under the name of "Tartazine." The respondents are chemical manufacturers in Basle, and they sent goods which infringed the appellants' patent to Messrs. Henry Johnson & Co., dyers in London, through a firm of forwarding agents at Basle, who posted the goods to Messrs. Johnson. The appellants claimed an injunction against both the respondents and Messrs. Johnson, having obtained leave of the Court to issue a concurrent writ in the action, and to serve notice of it on the respondents. The latter appeared and defended the action, Messrs. Johnson having given an undertaking not to sell the dye in future, or to infringe the appellants' patent, and having submitted to an order for an account of profits or damages and to pay costs. Mr. Justice North, in January last, granted the injunction prayed for, but his decision was reversed last April by a majority of the Court of Appeal, consisting of the present Master of the Rolls, and Lord Justice A. L. Smith; Lord Justice Rigby dissented.

The Lord Chancellor said that it had been ingeniously argued for the appellants that part of what had been done by the appellants had been done in this country, so that our Courts acquired jurisdiction over the foreigner who had sent these goods to England. The goods were actually forwarded from Basle, but it was said that the delivery of them for posting at Basle, and the handing of them over to the recipient in England was one continuous act, part of which was consummated within the jurisdiction. But it was well settled law that when goods were consigned to a named agent for delivery to a purchaser, the agent became the agent of the purchaser and not of the vendor. The fact that the agent in this case was the Post-Office made no difference in the principle. The English Courts had no jurisdiction over the respondents, and he agreed with Lord Justice Lindley, that if, instead of appearing to the writ, the respondents had applied to the Court to discharge the order which gave leave to serve out of the jurisdiction, the Court would have been bound to discharge such orders. The appeal must be dismissed with costs. The other noble and learned lords concurred.

FATALITY TO A CHLORATE MILLER. AN INSTRUCTIVE CASE.

MR. BRIGHOUSE, county coroner, held an inquest at St. Helens, on Wednesday, on the body of Charles Ward, aged 47, chemical worker, who met with a terrible death on Saturday last. Ward was employed as a chlorate miller at the Gerrard's Bridge Chemical Works, belonging to the United Alkali Company, Ltd., and when returning from work on Saturday afternoon he attempted to light his pipe, when his coat or shirt sleeves took fire, and he was terribly burned all over the body. Mr. Eraut, Her Majesty's Inspector of Factories, was present; Mr. H. L. Riley appeared for the Company, and Mr. R. W. H. Thomas for the relatives.

Mrs. Ward said her husband had been employed at the Gerrard's Bridge works about fourteen or fifteen years. On three or four previous occasions his clothing had got on fire. The practice was for the men to change their clothes when they started work. The rule as to changing clothes had been made after the last burning accident.

The Coroner: On January 27th in this year, we held an inquest on a man named Long, who died from his clothes catching fire. He worked at the Hardshaw Brook works of this Company, and the jury recommended that the men should be provided with a complete change of clothing, and should be compelled to change their clothing before commencing and leaving. Perhaps that is the case to which you refer?

Mrs. Ward: Yes. Witness (proceeding) said that her husband's clothes, all except his coat, were regularly washed.

The Coroner said it would perhaps be as well if he read the special rules which the Company posted in March last. The rules set out that the men employed in the grinding houses would be provided with a complete suit of clothes for working in, which must never leave the

works. These working clothes would be kept in the special lockers and would be washed at the Company's expense once a week. Special lockers would also be provided for the men's ordinary clothing, every precaution must be taken to prevent those clothes from becoming impregnated with chlorate.

John Orme, foreman, said he was with Ward when his clothes took fire. Ward used one of the company's suits to work in, consisting of stockings, shirt, trousers, and boots. The mode of changing the clothes was that the men went into one room and partially undressed. Then, with only a shirt or trousers on, they went through a door into the second room, where the working clothes were hung up. They took down their working clothes and returned to the first room to finish undressing and to put on their working clothes. The clothes were hung up round the walls, and not put in lockers.

The Coroner said he should think that if the men carried their working clothes about while wearing their ordinary clothes, the ordinary clothes would be certain to become impregnated. Then, if they put on the working clothes in the room where the ordinary clothes were hung, the chlorate dust would be certain to fly about and impregnate the ordinary clothes.

Witness admitted that this would be so. Proceeding, he said that when Ward and he had gone some distance up Gerrard-street towards College-street, Ward paused to light his pipe. Witness went on a few yards, and on looking back saw Ward's sleeve was on fire. He pulled his coat off and threw it in the road, and when he next looked up at Ward he was altogether enveloped in flames. The coat was a cloth one, and it must have been very much impregnated with chlorate, as it burned to a complete ash. All his other clothes were burnt off him.

The Coroner: Do you think that the way in which he changed his clothes was a compliance with these rules?—We thought it was sufficient. There were no lockers provided. When the rules were first made the men changed their clothes in a building quite away from the chlorate department, but they objected on account of coming through the cold air in their light clothing. Ward was one of those who objected. The changing rooms were now situated above the room where the chlorate was sieved.

Mr. Eraut said that the accident did not really come under the notice of his department, seeing that it happened in the streets, but was a matter in which they were greatly interested. The rules which had been made by the Company were most excellent, and went further than the ordinary rules under the Factory Act.

THEY WON'T WASH.

In some factories they insisted on the workers taking a weekly bath but it was very difficult to get workers to observe rules of that sort. We kly bath would scarcely prevent accidents of that kind from happening. At those works there was a bath provided outside the mill but that was for the men to jump in when they took fire while at work. Chlorate by itself did not burn, but when mixed with any substance like clothing it was most inflammable. He took an additional interest in that matter, because when inspecting the works a few weeks ago he had a conversation with Ward. On that occasion he was entirely satisfied with what was provided in the way of a dressing room. The Company saw that the working clothes were washed every week. He could not interfere in the matter of special lockers, but they would undoubtedly be very beneficial. The men should be very careful to have their own clothes regularly washed. The Factory Act special rules were well carried out at those works especially, and on his recent visit everything was to his satisfaction.

Orme, proceeding, in answer to Mr. Riley, said if there were lockers the men would change their clothes exactly in the same way as they did now. He had spoken once to Ward as he was coming out of a public-house, and told him he should not go into company when he had the clothes on that he had at the works. Ward told him that he was foreman at the works, but not outside. The jacket that was burned was one that Ward had worn a long time. Under the Factory Act rules they had simply to supply overalls, and not complete changes of clothing.

The Coroner, addressing the jury, said it seemed clear that the rules under the Act were fully complied with. There seemed to be no blame attaching to the Company, but if the jury had any suggestion to make they would doubtless consider it.

The Foreman said the men should be compelled to strip altogether before going into the second room, and they should put their working clothes in the second room.

The Coroner said his suggestion was that the men should go into the first room and undress entirely, and then go into the second room and dress there, and leave the building without again going into the first room, where their ordinary clothes were hung.

Mr. Hollingsworth, the manager of the works, said the Company would try all they could to carry out the suggestion.

The Coroner said the suggestion was not made by way of blame, but they were all mutually wishful to devise some scheme whereby life might be saved.

Trade Notes.

CHANGE OF ADDRESS.—Messrs. R. W. Greeff & Co. beg that on 1st of December they removed their offices to the building of Peck, Winch & Co., Ltd., No. 20, Eascheap (first floor), over branch of the City Bank, Ltd., corner of Love-lane.

IRON AND STEEL PLANT CO. : ANOTHER CONTRACT.—This firm, whose offices are situate at 10, Austin Friars, E.C., inform us they have received the contract for the supply of two petroleum tanks from the Great Indian Peninsular Railway Co.

MEETING OF CHEMICAL INDUSTRY.—*London Section:* The next meeting will be held at the Chemical Society's Rooms, Burlington House, Monday, December 6th, 1897, at 8 p.m., when the following will be read:—"The Sulman-Teed Process of Gold Extraction." Mr. H. L. Sulman and Dr. F. L. Teed.

EXPLOSION AT A CYCLE FACTORY.—An explosion occurred yesterday last, at the cycle factory of the Eadie Manufacturing Co., Redditch, by which a workman named William Hayder and two others were injured, one of whom is not expected to recover. The explosion was caused by the bursting of steam arrangements in sawdust pans and potash, which had recently been altered. Injured workmen are named Croxall and Govier, and are now in hospital, Croxall being in a critical condition.

MR. W. H. WILLCOX & CO., LTD.—This well-known firm of hants, engineers, mill, and railway furnisiers, 24, Southwark-ond, S.E., has now been turned into a private limited company. No shares are being offered outside, only among the employees, giving the employees a stake in the concern, it is hoped that the growth of the business during the past few years, may not be sustained, but surpassed. The new address as given above is noted.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Position of benzols is unsatisfactory. Prices are weak. Nearest about 1s. 10d. for 90's and 2s. for 50/90's, but these figures are to be pared somewhat. Creosote and tar oil are in good demand.

Anthracene is reported as moving much more freely at 5½d. A, and 4d. to 4½d. for B. Pitch is more encouraging at 20s. East Coast. Carbolic acids are firm at last quotations, with a tendency for crystals. Naphtha unchanged.

State of ammonia is again under a cloud, but it is only of the sorts making, and can therefore be dispersed if makers adhere to present decisive line of action. Prices are quoted according to the weight of the quoters. Makers generally are holding steadily for 6d. Beckton; £8. 15s. London outside makes; £8. 17s. 6d. Hull; £8. 15s. Hull; and £8. 13s. 9d. to £8. 15s. Leith. First cruels continue to be bought at these prices, possibly by the very few who are "bearing" the market.

MISCELLANEOUS CHEMICAL MARKET.

The alkali trade the course of prices is somewhat irregular. In the case of soda the competition is still keen between the rival makers, and price is unchanged at £5. 5s. f.o.r. makers' works, and delivery. For export, however, business is fairly active at a slightly better price. Caustic soda has a weaker tendency, though unchanged for spot delivery. Current prices, f.o.b. Liverpool, follow:—77%, £8. 10s.; 74%, £8. 2s. 6d.; 70%, £7. 5s.; 65%, net, per ton. Ammonia alkali is steady at £3. 17s. 6d., f.o.r., both for prompt and forward business. Soda crystals and soda ash are unchanged. In chlorates the competition for orders is with a lower tendency of price, and present quotations for potash and soda respectively are 3¾d. and 4½d.

Saltcake is firm at 19s. to 20s. in bulk free on rails, but price is unchanged at £4. 12s. 6d. per ton. Sulphate of soda is steady at £16. 5s. to £16. 7s. 6d. for ring shipment f.o.b. Liverpool. Acetate of lime is dearer, increased freights. Brown, £5. 15s. c.i.f. and grey at £7. 10s.

Potash, caustic and carbonate, are steady on the spot with a tendency, yellow prussiate of potash dearer at 6¾d. per lb. firm with an advancing tendency at 1s. 1½d. to 1s. 2d. per cwt. powdered arsenic steady at £21. 15s. f.o.r. Garston for best but with some small lots offering at £21. 10s. Bichromates steady. Trade in sulphocyanides and miscellaneous chemicals is still continues quiet.

REPORT ON MANURE MATERIAL.

The market remains very steady, with considerable inquiry, but advanced prices seem to be checking actual business.

Quotations for mineral phosphates are unchanged.

There is good inquiry for River Plate bones, and something near £4. per ton would have to be paid for anything of handy size afloat. Business has been done in East Indian bone meal at £4. 5s. per ton, at which price there are still sellers. Common grinding bones are in request, but in the absence of supplies no further business is reported.

Nitrate of soda is steady at 7s. 6d. for good, up to 7s. 9d. per cwt. for refined quality.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is firm, and in rather small request, so that prices are for the most part nominal. Olive is moving quietly at full rates, but offerings are small and the market quiet in consequence. Liverpool makes of linseed are being steadily held for 15s. 9d. to 16s. 6d. per cwt., in export casks, according to quality. Cottonseed keeps dull at 14s. 9d. to 15s. 6d. per cwt. for Liverpool refined. Castor oil is fairly steady, with good seconds Calcutta offering at 3¼d. to 3½d., and first pressure French 3¾d. to 3½d. per lb. Tallow is firm, and moving well at full prices. Resin is selling quietly at top prices for all grades. Spirits of turpentine are quietly steady at 24s. 6d. to 24s. 9d. per cwt. on spot. Petroleum quiet, with a weaker tendency in refined; prices for both American and Russian are nominal at present.

CAKES.—The market has continued firm for linseed, with a fair inquiry for both American Western on the spot and Liverpool makes, values are the turn in sellers' favour at £6. 17s. 6d. to £7. 2s. 6d. for the former, and at £7. 15s. to £8. 10s. per ton for the latter. There is no improvement to report in the demand for American decorticated cottonseed, but the quotation for good to choice brands is still £5. 10s. to £6., whilst Liverpool makes meet a fair inquiry at £6. 5s. to £6. 15s. per ton. Liverpool undecorticated makes firm at £4. 2s. 6d. to £4. 10s., according to brand. Egyptians steady, with sellers on the spot at £4. 2s. 6d. per ton, but the demand is only moderate.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The market during the week has been a very quiet one, but at the time of writing there is a little rally in linseed oil, but refined cotton oil experiences very little change. The imports up to date in 1897 and 1896 in the following articles have been: Linseed, 640,207 qrs. against 873,447 qrs.; rapeseed, 85,851 qrs. against 83,031 qrs.; cottonseed, 176,836 tons against 143,942 tons; oilcakes, 9,361 tons against 11,575 tons; olive oil, 4,202 tons against 5,384 tons. Linseed oil steady, spot 14s., rather buyers forward, Jan-April, 14s. 6d. accepted; May-Aug., 14s. 9d. naked. Boiled and refined, £1. 10s. to £1. 10s. per ton extra. Refined cotton oil quiet, spot naked, sellers 12s. 7½d.; forward Dec.-April, 12s. 9d. buyers. Crude ditto spot 11s. 7½d. Filtered refined £1. per ton extra; casks £1. and ordinary barrels £1. 10s. per ton extra. Turpentine, American, 24s. 3d. per cwt. Arachide nut oil, 28s. per cwt. Tallow has advanced about £1. per ton. Cod oils £16. to £18. per ton. Olive oil, no demand, prices unchanged. Oleines from £16. per ton for brown to £20 for re-distilled white. Olive oil soap orders much competed for at unremunerative rates, £16. per ton. Stockholm tar 24s. 3d., and firm thereat. Danish butter, 116s. to 120s. per cwt.; Dutch, 104s. to 112s.; Canadian, 85s. to 105s. per cwt.

CAKES continue a very firm market, and likely to continue so with the winter months. Linseed cakes are firm, with rather a quiet demand, 95% pure £7. 17s. 6d. Oilcakes (linseed), £6. 17s. 6d. to £7. per ton; Russians, £7. 7s. 6d. to £7. 12s. 6d.; Americans, to arrive, quoted £6. 17s. 6d. Cotton cakes are also firm, best makes, £4. 1s. 3d. to £4. 2s. 6d.; seconds, 2s. 6d. per ton less; Dec.-April, £4. to £4. 1s. 3d. Rape cakes, Black Sea, £4. 10s.

PAINTS.—Manufacturers continue to find orders difficult to get. White and red leads firm and unchanged. Dry mineral colours from £4. per ton. Ordinary colours in oil from £10. per ton. Ultramarines from 2½d. per lb. Lime blue, £12. per ton. Paint remover, 25s. per cwt. Black varnish, £5. per ton. Oak varnish from 5s. per gallon.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Soon after last week's report was despatched sulphate of ammonia perceptibly lost colour, and by the week-end middle holders were parting at £8. 17s. 6d., although makers stood out for £9. It seems the Continental buyers have been circularised, wholesale fashion, that the rise is off, and that a normal level will be quickly resumed, on what authority is not stated. Makers hold this as merely an unscrupulous

use for monetary market purposes. In the general market there are hardly any movements of any kind to record. Perhaps sulphate of copper is again a trifle less firm. There is a continued scarcity in one or two of the makes of chemicals, but without any effect on the quotations as yet. In the department of mineral products the higher grades of lubricants are slightly easier, and the quotations are giving way a little. The others are all as before.

Chief prices current are:—Soda crystals, £2. 10s. to £2. 17s. 6d. nett, Tyne, soda ash, 48/62°, £4. 5s. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £4. 17s. 6d. to £5. 7s. 6d. nett, Glasgow; caustic soda, white, 74°/88. 2s. 6d., 70/72° £7. 7s. 6d., 60/62° £6. 7s. 6d., cream 60/62° £6. 2s. 6d. all nett, Liverpool; bleaching powder, 35/37°, £6. 5s. nett, Tyne; saltcake, 19s.; borax, English, refined, £15., and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4d. nett, for Scotch and English deliveries (for export, 3¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3d. nett, f.o.b. Glasgow); chlorate of potash, 3¼d. less 5%, any port; nitrate of soda, 7s. 6d. to 7s. 9d.; sulphate of ammonia, £8. 17s. 6d. prompt, f.o.b. Leith; salammianic, first and second white, £33. and £31. nett any port; sulphate of copper, £16. 5s. less 5% Liverpool; paraffin scale, hard, 1¾d. to 1½d. per lb., soft, 1½d. per lb.; paraffin wax, 120° semi-refined, 1¾d. to 2d. per lb.; paraffin spirit (naphtha), 7d. per gallon; paraffin oil (burning), No. 1, 5¾d., and crystal, 6d., at Glasgow and other big centres, for Scotch buyers (English sales a shade lower); ditto (lubricating) 865° £4. 15s. to £5. 5s., 885° £5. 15s. to £6. 5s., and 890/895° £6. 7s. 6d. to £7. Week's imports of sugar at Greenock were 37,100 bags beet unrefined.

TYNE CHEMICAL REPORT.

TUESDAY.

Chemical market is dull, and shipments show signs of falling off as usual at this time of the year. Caustic 76/77° £9. per ton, 70° £7. 10s. per ton. Soda crystals £2. 12s. 6d. per ton, gross weight. Sulphur is scarce and firm at £5. per ton, nett.

Bleaching powder, softs, £6. 5s. per ton, nett; hards, £6. 10s. per ton, nett; caustic soda, 76/77° £9. and 70° £7. 10s., per ton, nett; recovered sulphur, 2 cwt. bags, £5. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. 6d. per ton, nett; do., 52%, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95° crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminite of soda, £30. per ton, nett.

SALT—South Durham Salt continues steady at 9s. per ton, f.o.b. Tees.

COALS.—There is still very little change to report in the market. Gas coals are in full demand for both home and export, and price remains firm. Coke rather easier in price. Best Northumbrian steam,

8s. 3d. to 8s. 6d. per ton; second qualities, 7s. 3d. to 7s. 6d. per ton; small steam, 3s. 3d. to 3s. 6d. per ton; gas coals 8s. od. to 8s. 6d. per ton; bunker coals, 7s. 6d. to 7s. 7½ per ton; coke, 17s. 6d. to 20s. per ton.

New Companies.

George Farmiloe & Co., Ltd.—CAPITAL £250,000. in £10. shares (22,000 pref.). This company has been formed to acquire and carry on the business of lead manufacturers and merchants, polished plate and sheet glass factors, colour, oil and varnish merchants, etc., carried on at 34, St. John-street, West Smithfield, and at Clerkenwell, Blackfriars, and elsewhere as "George Farmiloe & Sons," and to adopt a certain agreement. The subscribers to the memorandum of association are:—G. Farmiloe, 34, St. John-street, E.C., merchant; T. M. Farmiloe, 34, St. John-street, E.C., merchant; J. M. Farmiloe, 34, St. John-street, E.C., clerk; Miss E. Farmiloe, 43, Maresfield Gardens, N.W.; Miss A. E. Farmiloe, 43, Maresfield Gardens, N.W.; Mrs. F. M. Hardy, 425, Victoria Parade, Melbourne; Mrs. A. E. Farmiloe, 24, Grosvenor Gardens, Willesden.

Somerville & Co., Ltd.—CAPITAL £3,000. in £1. shares. This company has been formed to acquire and carry on a manure and oil factory in Montrose. Managing director, J. Mitchell, Registered office, 5, Dock Buildings, Montrose.

Castle Brand Co., Ltd.—£100. in £10. shares. This company has been formed to manufacture, sell, and deal in colours, paints, varnishes, stains, dyes, and polishes. The number of directors is not to be less than 3 nor more than 7; the first are A. Holmes, J. H. Holmes, L. W. Holmes, and E. Holmes.

Maxim Carbide Process & Acetylene Gas Syndicate, Ltd.—CAPITAL £2,500 in £1. shares. This company has been formed to acquire, own, and work certain patents relating to the manufacture of calcium carbide or acetylene gas, and to adopt an agreement with J. T. Carrington. The number of directors is not to be less than 3 nor more than 6; the subscribers are to appoint the first; qualification £50.

Roumanian Pegamoid Syndicate, Ltd.—CAPITAL £30,000. in £1. shares. This company has been formed to manufacture, sell, and deal in paper, paper goods, cardboard, railway tickets, millboards, wall and ceiling papers, cotton and woollen goods, waterproof goods, floor cloths, etc. The subscribers to the memorandum of association are:—J. C. Woolfe, 18, Eckstein-road, S.W., secretary; C. M. Sanders, Belton-road, Sidcup, Kent, manager; J. B. O. Howes, 1, Wellington Chambers, Buckingham Gate, S.W., civil engineer; M. J. S. Harper, Nutfield House, Weybridge, clerk; F. S. Pine, 22, Percy-road, Leytonstone, clerk; R. H. Harper, 38, Old Jewry, E.C., director; A. J. Crichton, 37, Abingdon Villas, Kensington, accountant.

Siderosthen Paint Syndicate, Ltd.—CAPITAL £15,000. in £1. shares. This company has been formed to adopt certain agreements, and to acquire, own, and work patent No. 7,366 of 1895 for "improvements relating to paints suitable for coating iron and other surfaces." The subscribers to the memorandum of association are:—T. Dixon, 208, Upper Thames-street, E.C., merchant; J. Henderson, 7, Mincing Lane, E.C., merchant; L. P. Andrews, 91, Queen Victoria-street, E.C., merchant; S. Ryder, Seedley Lodge, Pendleton, Manchester, agent; R. O. Henderson, 7, Mincing Lane, E.C., merchant; G. Wemyss, 65, Old Bailey, E.C., paper manufacturer; C. H. Thomas, 65, Old Bailey, E.C., underwriter. Registered office, 91 Queen Victoria street, E.C.

IMPORTS OF CHEMICAL PRODUCTS

AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending November 20th.

Acetic Acid—			
Sweden,	20 pks.	M. D. Co.	
Holland,	60	R. W. Greeff & Co.	
"	71	A. & M. Zimmermann	
"	50	J. Owen	
Acetone—			
Holland,	2 drs.	J. Owen	
Germany,	35	Matthews & Luff	
Alkali—			
France,	24 c.	J. Barber & Co.	
Canada,	168	"	
Alum—			
Holland,	173 cks.	Ohlenschlager Bros.	
Antimony—			
Japan,	20 t.	H. R. Merton & Co.	
Arsenic—			
Portugal,	37 brls.	Coverley & Westray	
Germany,	5 cks.	Burgoyne & Co.	

Asbestos—

Germany,	£75	Craven & Co.
Canada,	575	J. Owen

Barytes—

Belgium,	133 pks. 155 bgs.	O'Hara & Hoar
"	39 brls.	W. Harrison & Co.
"	121 250 bgs.	J. L. Lyon & Co.
Holland,	38 cks.	"
"	44	W. Harrison & Co.
Belgium,	39 brls.	Fleming's Oil & Chemical Co.
Holland,	24 cks.	O'Hara & Hoar
Germany,	55	W. Harrison & Co.

Bromine—

Germany,	40 cs.	A. & M. Zimmermann
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Caoutchouc—

Natal,	20 c.	J. T. Rennie, Son, & Co.
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Russia,	2	Schenker & Co.
Belgium,	103	J. Harrison
E.C. Africa,	87	L. & L. D. Jt. Co.
Germany,	820	F. Huth & Co.
Zanzibar,	1	L. & L. D. Jt. Co.
Penang,	340	Butler's Wf. Ltd.
"	615	E. Boustead & Co.
Holland,	680	J. Barber & Co.
France,	4	H. Johnson & Sons
Ceylon,	1	R. G. Hall & Co.
Holland,	29	S. Figgis & Co.

Carbolic Acid—

Germany,	30 pks.	J. G. Back
"	50	Blagden, Waugh & Co.

Castor Oil—

France,	20 cs.	H. Hehl
Belgium,	43	J. T. Morton

Caustic Potash—

France,	13 drs.	J. A. Reid
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Chemicals (otherwise undescribed),	Norway,	£75	S. C. D. Co.
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Belgium,	48	O. Scholag
Holland,	255	J. Owen
"	28	Typke & King
"	83	T. H. Lee
Germany,	269	"
"	35	J. Norrenberg & Co.
Germany,	70	L. & I. D. Jt. Co.
"	34	Elkan & Co.
"	380	H. Lambert
"	10	T. Palmer
"	60	R. W. Greeff & Co.
Belgium,	269	T. H. Lee
"	20	R. D. Lyon
Holland,	7	Carey & Sons
"	30	H. Lorear
Belgium,	12	John Cockerill Ltd
Germany,	35	Beresford & Co.
Italy,	40	Hughes, Chemery & Co.
Germany,	63	Phillips & Graves
"	75	Fuerst Ros.
"	941	A. & M. Zimmermann
"	4	Pickford & Co.
France,	160	R. & F. Wf. Co.
N. Zealand,	6	L. & N. W. Ry. Co.

Peras—
many, 7 cks. A. & M. Zimmermann
m of Tartar—
land, 26 cks. Kirkpatrick & Co.
oe, 3 J. W. Cook & Co.
4 B. & F. Wf. Co.
rine—
many, 14 cks. City Coml. Wf.
ce, 20 bgs. C. A. Comyn
uffs—
iline—
um, 12 pks. W. Gerson & Co.
gois—
23 bgs. Chalmers, Guthrie
& Co.
31 aks. B. & F. Wf. Co.
snineal—
ries, 15 bgs. Swanston & Co.
20 W. M. Smith & Sons
12 Lewis & Peat
11 Sperling & Williams
26 Hendrey & Martin
tracts—
ce, 200 cs. T. H. Lee
any, 17 cks. Rosenberg, Loew & Co.
ates, 20 T. H. Lee
um, 14 cs. Leach & Co.
nd, 15 pks. M. Bensch
la, 170 cks. Furness, Withy
& Co.
stic—
1, 20 t. Churchill & Sim
mbler—
pore, 2,034 bls. Adamson, Gilfillan
& Co.
2,374 pks. J. W. Cook & Co.
4 bls. Shaw, Adams & Co.
ore, 3,032 P. & O. Co.
966 R. & J. Henderson
igo—
ates, 13 chts. W. J. & H.
Thompson
wood—
nduras, 151 t. W. Shelcott
aboliams—
lies, 1,366 bgs. W. Shelcott
ron—
2 cs. Dawson Brs.
1 C. Brumlen & Co.
mac—
195 bgs. R. Waters
200 W. Shelcott
100 Skilbeck Brs.
250 pks. A. Slaton & Co.
150 bgs. T. Barter & Co.
ners' Bark—
m, 10 t. Leach & Co.
de, 92 J. Greig
onia—
key, 125 t. Anning & Cobb
17 A. & W. Nesbitt
key, 25 A. E. Piggott
fts (otherwise und scribed)—
d, 1 ck. Hernu, Peron & Co.
d, 700 bgs. R. Bennett & Co.
y, 50
d, 50 Dunlop Brs. & Co.
1—
es, 50 pks. 300 c. L. & I. D. Jt. Co.
50 300 Wilson's & Co.
131 792 Lon. & Til.
100 600 Ltge. Co.
50 285 Deering & Co.
200 400 J. Keiller & Son
200 400 Trier, Meyer & Co.
25, 100 600 T. J. Lipton
100 600 E. & T. Pink
550 787 Fellows,
250 250 Morton, & Co.
1,280 2,280 Williams,
1,000 1,000 Torrey, & Co.
100 380 L. Norman
& Co.
100 580 Pearce, Pelly
& Co.
200 200 Orient Co.,
Ld.
5, 4,349 7,056 W. E. Cole
& R. G. Hall
& Co.
L. & I. D. Jt. Co.
J. Barber & Co.
Steinhoff, Brs. & Co.
Mory & Co.

U. States, 50 L. & I. D. Jt. Co.
Germany, 60 Craven & Co.
76 Philipps & Graves
Holland, 40 G. Rahn & Co.
Belgium, 200 Leach & Co.
France, 350 Duche & Sons
Belgium, 50 T. H. Lee
France, 101 J. Harrison
Lamp Black—
U. States, 100 cs. 186 brls. L. & I. D. Jt. Co.
Lead Acetate—
Holland, 26 cks. Petri Brs.
Litharge—
Germany, 57 cks. H. Wallace & Co.
Holland, 6 J. Barber & Co.
6 J. Owen
Magnesia—
Belgium, 500 bgs. P. Stewart
Manure—
E. Indies, 200 t. A. Hunter & Co.
Germany, 40 F. W. Berk & Co., Ltd.
50 T. McCarnie & Co.
Methyl Alcohol—
France, 20 cks. R. D. Lyon
Mica—
E. Indies, 1,170 W. M. Smith & Sons
Molasses—
U. States, 132 pks. 680 c. J. W. Cook & Co., Ltd.
25 138 E. & T. Pink
175 972 Deering & Co.
640 4,033 Robottom
Wilson & Co.
Furness & Co.
Ochre—
Holland, 4 cks. 2 cs. Philipps & Graves
France, 44 W. B. Dick & Co.
U. States, 25 Taylor Brs.
Oxalic Acid—
Norway, 30 pks. S. C. D. Co.
Pitch—
Holland, 18 cks. Poth, Hille, & Co.
Plumbago—
Germany, 56 cks. B. Gallaway
U. States, 20 Lunham & Moore
Singapore, 68 Marshall & French
Ceylon, 227 J. Thredder, Son, & Co.
19 R. G. Hall & Co.
Potassium Carbonate—
Germany, 100 c. A. & M. Zimmermann
France, 100 Petri Brs.
Holland, 100 Charles & Fox
Germany, 340 J. A. Reid
France, 30 W. E. Cole
100
Potassium Chloride—
Germany, 500 bgs. Anglo-Contl. Guano Works
Potassium Oxalate—
Holland, 20 cks. R. W. Greeff & Co.
Potassium Permanganate—
Holland, 100 kgs. J. M. Steel & Co.
5 cks. R. W. Greeff & Co.
Potassium Sulphate—
Germany, 254 bgs. Bessler, Waechter, & Co.
Belgium, 50 Charles & Fox
Pumice Stone—
Italy, 2 t. E. Fellingham
3 L. & N. W. Rly. Co.
6 O'Hara & Hoar
N. Zealand, 1 Clyde Shipping Co.
Pyrites—
Norway, 2,600 t. R. Englander & Co.
Pomaron, 1,890 Mason & Barry
Quicksilver—
N. Russia, 100 btl. L. & I. D. Jt. Co.
Italy, 100 flsks. H. Bath & Sons
Rosin—
France, 50 brls. Perkins & Homer
25 F. & S. Chiesman & Co.
Saltetre—
Germany, 62 cks. J. Hall & Son
25 L. & I. D. Jt. Co.
Soda—
Belgium, 500 c. A. J. Luke & Co.
1,000 Sawet, Sons, & Co.
Holland, 150 R. W. Greeff & Co.
Soda Crystals—
Belgium, 1,000 bgs. W. A. Davis
Sodium Acetate—
France, 200 bgs. J. Harrison
Belgium, 25 cks. H. Lorenz
Sodium Carbonate—
Belgium, 500 bgs. P. Stewart

Sodium Prussiate—
Belgium, 17 cks. Blagden, Waugh, & Co.
Sodium Sulphate—
Holland, 41 kgs. R. W. Greeff & Co.
Starch—
Belgium, 200 cs. Vokins & Co.
160 C. Tennant, Sons, & Co.
186 Becker & Wagner
Germany, 6 cks. E. Olyett & Sons
Belgium, 330 cs. T. H. Lee
80 165 pks. J. Harrison
Holland, 1,570 Little & Johnston
15 Philipps & Graves
Belgium, 170 F. Claydon & Co.
Germany, 200 Horne & Co.
France, 200 Prprs. Dowgate Dk.
Belgium, 40 Leach & Co.
Germany, 120 Philipps & Graves
U. States, 250 brls. Beck & Pollitzer
Stearine—
France, 230 bgs. G. Boor & Co.
Belgium, 156 14 cks. H. Hill & Sons
Holland, 14 White & Fawcwell
Sulphur—
Italy, 6 t. J. Moreton & Co.
62 Bailey & Leatham, Ltd.
10 F. C. Devon & Co.
5 M. F. Smith
5 Hyslop & Symonds
4 W. J. W. Childs
100 Andorsen, Becker, & Co.
Talc—
France, 440 Blackwell & Co.
Tar—
N. Russia, 775 brls. Union Whvs. Co.
Tartaric Acid—
Holland, 4 pks. W. M. Smith & Sons
27 Kirkpatrick & Co.
7 B. & F. Wf. Co.
2 F. C. Devon & Co.
Ultramarine—
Belgium, 20 cks. J. Harrison
Holland, 4 H. Hodson & Co.
20 Hernu, Peron, & Co.
Germany, 55 cs. Steinhoff, Sons, & Co.
Holland, 44 pks. G. Rahn & Co.
16 cks. McDougall & Bonthron
2 J. Barber & Co.
3 cs. Haefner, Hilpert, & Co.
Yarnish—
U. States, 1 pk. L. & I. D. Jt. Co.
Germany, 13 T. H. Lee
U. States, 6 O'Hara, Matthews, & Co.
Verdigris—
France, 2 cks. H. Lorenz
White Lead—
Holland, 18 cks. M. Ashby, Ltd.
Germany, 8 J. Barber & Co.
Belgium, 22 brls. Burrell & Co.
48 T. & W. Farmiloe, Ltd.
Holland, 39 cks. W. A. Rose & Co.
Belgium, 19 brls. J. L. Lyon & Co.
Wood Pulp—
Denmark, 134 pks. Henderson, Craig, & Co.
Sweden, 240
Holland, 1,451 E. J. & W. Goldsmith
Sweden, 442 btl. J. Owen
Portugal, 500 pks. Caima Wood Pulp Co.
Norway, 1,616 J. Sharp
300 E. J. & W. Goldsmith
U. States, 164 Wilson's & Furness Co.
Zinc Oxide—
Holland, 500 cks. Soundy & Sons
Germany, 95 brls. M. Ashby, Ltd.
Holland, 100
Germany, 500 cks. Soundy & Sons
Holland, 25 J. Matton
U. States, 100 M. Ashby, Ltd.

Asbestos—
New York, 15 bgs.
Barytes—
Rotterdam, 44 cks.
Antwerp, 15
Borax—
Valparaiso, 3,630 bgs.
Caoutchouc—
Valparaiso, 10 pks. 63 bls. J. H. Schroder
Chemicals (otherwise under,)—
Hamburg, 2 cs.
Cod Oil—
Hamburg, 5 brls.
Colours—
Ghent, 4 brls. J. T. Fletcher & Co.
Rotterdam, 272 cks. 2 cs.
Copperas—
Boston, 10 brls. Hodgson & Simpson
5 hf.-brls.
Cottonseed Oil—
N'port News, 150 brls.
Galveston, 2,510 aks.
New York, 230
Cream of Tartar—
Bordeaux, 27 cks. 1 bg.
Oporto, 3
Dyestuffs—
Cutch—
Rangoon, 2,000 bxs.
Extracts—
Hamburg, 8 cks. 12 bxs.
New York, 36
Gambier—
Singapore, 2,031 bls.
Logwood—
Beltze, 38 t. P. Lechie & Co.
60 Everingham & Co.
Saffron—
Alicante, 2 cs. Weaver & Story, Ld.
Valencia, 3
Farina—
Fiume, 250 bxs.
Hamburg, 500 bgs. H. Tyrer & Co.
Glucose—
New York, 150 brls. T. M. Duche & Sons
Philadelphia, 500
Glue—
Hamburg, 40 bgs.
Gibraltar, 1 cs.
Fiume, 100 bgs. 61 pks.
Rotterdam, 143
New York, 20 brls. 150 cs. Anglo-American Oil Co., Ld.
Iodine—
Valparaiso, 6 brls. A. Gibbs & Sons
67
Lamp Black—
New York, 50 brls.
Lead Acetate—
Hamburg, 16 cks.
Mica—
New York, 15 brls.
10 C & J. Potter
Mirbane Oil—
New York, 1 can Fraser & Co.
Molasses—
Alexandria, 550 brls.
Oxalic Acid—
Rotterdam, 9 cks.
Paint—
New York, 30 brls. Anglo-Am. Oil Co. Ld.
Paraffin Scale—
Baltimore, 200 brls.
100 Bancroft & Co.
Phosphate—
Ghent, 120 t.
Phosphate Rock—
Brunswick, Ga., 1,465 t.
Potash—
Hamburg, 10 cks.
Potassium Carbonate—
Hamburg, 80 cks.
Stettin, 38 Sachse & Klemm
Potassium Chloride—
New York, 5 cs. Fraser & Co.
Pyrites—
Huelva, 3,141 t. Matheson & Co.
2,000 H. Bath & Son
Salicylic Acid—
Hamburg, 7 cs.
Saltetre—
Hamburg, 2 cks.

LIVERPOOL.

Week ending November 18th.

Aluminium—
New York, 5 cs. T. Ashbury
Ammonia (Liquid)—
Ghent, 1 dm.
Arsenic—
Hamburg, 1 kg.

Silver Sulphide —	
Vera Cruz,	16 cs. Elliot Metal Co.
Soap —	
Baltimore,	136 brls.
Rotterdam,	7 cs.
Sodium Nitrate —	
Iquique,	13,974 bgs.
Starch —	
New York,	36 brls. J. Armstrong & Co.
Ghent,	20 cs. J. T. Fletcher & Co.
"	430 pks. J. T. Fletcher & Co.
Antwerp,	145 cs. J. T. Fletcher & Co.
"	210
Stearine —	
Antwerp,	26 bgs.
Baltimore,	108 tcs.
Talc —	
Hamburg,	5 bgs.
Tallow —	
Baltimore,	250 tcs.
Maranham,	8 brls.
Campana,	300 cks.
Treacle —	
Bordeaux,	2 cs.
Philadelphia,	750 brls.
Ultramarine —	
Rotterdam,	20 cks.
Varnish —	
New York,	12 brls. W. A. Warren
"	2 R. R. Jackson & Co. Ld.
Waste Salt —	
Hamburg,	1,175 cks. H. Tyer & Co.
"	3,048 bgs.
White Lead —	
Ghent,	16 brls.
Rotterdam,	26 cks.
Wood Pulp —	
Boston,	320 bls.
Zinc Oxide —	
Rotterdam,	60 cks.
Antwerp,	30 brls.
Zinc White —	
Rotterdam,	25 pks.
Hamburg,	40 cks.
Rotterdam,	20 J. Mathews & Co.

MANCHESTER.

Week ending November 20th.

Acetate of Lime —	
New York,	204 bgs.
Acetic Acid —	
Rotterdam,	11 blns.
Alizarine —	
Rotterdam,	{ 7 cks.
	40 brls.
Aluminous Cake —	
Rotterdam,	135 cks.
Ammonium Sulphate —	
Rotterdam,	15 cks.
Aniline Colours —	
Rotterdam,	4 cks.
Aniline Salts —	
Rotterdam,	13 cks.
Arachide Oil —	
Rotterdam,	1 ck.
Asbestos —	
Montreal,	400 bgs.
Barium Chloride —	
Rotterdam,	11 cks.
Barytes —	
Rotterdam,	{ 100 bgs.
	11 cks.
Caustic Potash —	
Antwerp,	80 dms.
Chemicals (otherwise undescribed)	
Rotterdam,	25 cks.
Chromium Acetate —	
Rotterdam,	10 brls.
Colours —	
Rotterdam,	81 cks. 6 kgs.
Hamburg,	2 cs. 124 pks.
Boulogne,	10
Farina —	
Rotterdam,	1,000 bgs. N. N. Jackson
Hamburg,	40
Glucose —	
New York,	150 brls.
Glue —	
New York,	10 brls.
Rotterdam,	310 bgs.

Hamburg,	20
Antwerp,	26 bls.
Indigo —	
Rotterdam,	13 cts. 20 cs.
Limestone —	
Antwerp,	1 crte.
Litharge —	
Rotterdam,	7 cks.
Molasses —	
N. Orleans,	25 brls.
Oxalic Acid —	
Rotterdam,	15 cks.
Hamburg,	15
Paraffin Scale —	
New York,	1,216 brls.
Phosphate —	
Ghent,	300 t. United Alkali Co.
Phosphorus —	
New York,	10 cs.
Pitch —	
Rotterdam,	12 cks.
Potash —	
Rotterdam,	161 cks.
Potassium Chloride —	
Hamburg,	19 cks.
Potassium Chromate —	
Hamburg,	1 ck.
Saltpetre —	
Hamburg,	1 brl.
Soda —	
Antwerp,	8 cks.
Sodium Nitrate —	
Rotterdam,	8 cks.
Starch —	
New York,	200 bgs.
Rotterdam,	170 cs.
Antwerp,	320
Tar Salt —	
Hamburg,	4 cks.
Tartaric Acid —	
Rotterdam,	17 cks.
Ultramarine —	
Rotterdam,	4 cks.
Waste Salt —	
Hamburg,	{ 1,000 bgs. and qty.
	350 cks.
Wood Pulp —	
New York,	100 rolls
	488
Montreal,	895 bls.
	3,472 bds.
Rotterdam,	400
Hamburg,	247 bls.
Zinc Oxide —	
New York,	100 brls.
Rotterdam,	{ 120
	20 cks.
Hamburg,	25

HULL.

Week ending November 20th.

Acetic Acid —	
Rotterdam,	2 cks. Hutchinson & Son
Antimony —	
Antwerp,	45 cs. Wilson, Sons, & Co., Ld.
Barytes —	
Amsterdam,	151 cks. W. & C. L. Ringrose
Antwerp,	96 Bailey & Leatham, Ld.
"	34 H. F. Pudsey
"	200 bgs.
Bone Meal —	
Kurrachee,	8,000 bgs.
Camphor —	
Hamburg,	2 cks. Wilson, Sons, & Co., Ld.
Chemicals (otherwise undescribed)	
Danzig,	16 cks.
Amsterdam,	4 W. & C. L. Ringrose
Copenhagen,	2 Wilson, Sons, & Co., Ld.
Hamburg,	1 cs.
Antwerp,	2 cks.
"	19 pks.
Cod Oil —	
Aalesund,	47 brls. Wilson, Sons, & Co., Ld.
Christiania,	5
Hamburg,	76
Bergen,	94
Colours —	
Danzig,	5 cks.

Ghent,	4 brls.
Amsterdam,	4 cs. Wilson, Sons, & Co., Ld.
Antwerp,	22 cks. Ringrose
Rouen,	4 cks. Wilson, Sons, & Co., Ld.
Hamburg,	2
Rotterdam,	6 cs. Wilson, Sons, & Co., Ld.
"	28 brls. W. & C. L. Ringrose
Dextrine —	
Stettin,	50 bgs. Wilson, Sons, & Co., Ld.
Dyestuffs —	
Logwood	60 bgs. Wilson, Sons, & Co., Ld.
Myrabolams	
Bombay,	3,124 bgs.
Farina —	
Harlingen,	400 bgs. W. & C. L. Ringrose
Stettin,	200 Wilson, Sons, & Co., Ld.
St. Petersburg,	1
Harlingen,	820 bls. Hutchinson & Son
Glucose —	
New York,	400 brls.
Stettin,	10 cks. Wilson, Sons, & Co., Ld.
Glue —	
Philadelphia,	8 brls.
Christiania,	10 bls. Wilson, Sons, & Co., Ld.
Rouen,	22 cks. Rawson & Robinson
Hamburg,	90 bgs. Wilson, Sons, & Co., Ld.
"	50 pks. Wilson, Sons, & Co., Ld.
Kallum —	
Hamburg,	10 cks. Wilson, Sons, & Co., Ld.
Limestone —	
Antwerp,	4 crts. Wilson, Sons, & Co., Ld.
Linseed Oil —	
Hamburg,	4 brls. H. Briggs, Sons, & Co.
Paint —	
Hamburg,	1 ck. H. Briggs, Sons, & Co.
Rouen,	2 cs. R. T. Bruce & Co.
Phosphate —	
Dunkirk,	500 bgs. Wilson, Sons, & Co., Ld.
Ghent,	160 t. "
Potash —	
Dunkirk,	87 cks. Wilson, Sons, & Co., Ld.
Prussic Acid —	
Amsterdam,	5 cks. Wilson, Sons, & Co., Ld.
Pumice Stone —	
Messina,	244 pks. Wilson, Sons, & Co., Ld.
"	30
Saltpetre —	
Antwerp,	15 bgs. Wilson, Sons, & Co., Ld.
Hamburg,	{ 12
	2 cks. "
Soap —	
Bari,	27 cs.
Soda —	
Ghent,	100 bgs. Wilson, Sons, & Co., Ld.
Antwerp,	170 Bailey & Leatham, Ld.
"	3 cks. Wilson, Sons, & Co., Ld.
Starch —	
Ghent,	128 cs. Wilson, Sons, & Co., Ld.
Palermo,	1,400 bgs. "
Stettin,	650
"	1
Stearine —	
Antwerp,	87 pks. Wilson, Sons, & Co., Ld.
Sulphur —	
Catania,	469 pks. Wilson, Sons, & Co., Ld.
"	549 100 t.
Tallow —	
New York,	130 tcs. Wilson, Sons, & Co., Ld.
Hamburg,	30
Dunkirk,	78 cks. "

Tar —	
St. Petersburg,	1 ck.
Tartar —	
Bari,	46 cks. Wilson, Sons, & Co., Ld.
Tartaric Acid —	
Rotterdam,	5 cks. Hutchinson & Son
Ultramarine —	
Rotterdam,	2 pks. Hutchinson & Son
Waste Salt —	
Hamburg,	125 t. Wilson, Sons, & Co., Ld.
White Lead —	
Antwerp,	52 cks. Bailey & Leatham, Ld.
Dunkirk,	17 brls. Wilson, Sons, & Co., Ld.
Wood Pulp —	
Drontheim,	1,520 bls. Wilson, Sons, & Co., Ld.
Bergen,	422 pks. "
Christiania,	721 bls. "
Abo,	48 J. Good & Sons
Rotterdam,	84 pks. Hutchinson & Son

GLASGOW.

Week ending November 25th.

Acetic Acid —	
Rotterdam,	10 hmpers. J. Rankine & Son
Acids —	
Boston,	10 brls.
Ammonium Nitrate —	
Rotterdam,	60 cks. J. Rankine & Son
Barium Chloride —	
Rotterdam,	4 cks. J. Rankine & Son
Barytes —	
Rotterdam,	110 bgs. J. Rankine & Son
Colours —	
Hamburg,	9 cks. 1 cs. J. Rankine & Son
Rotterdam,	5
Cottonseed Oil —	
Baltimore,	150 brls. J. Rankine & Son
Rotterdam,	25
Cream of Tartar —	
Bordeaux,	12 cks.
Barcelona,	16
Tarragona,	5
Dextrine —	
Hamburg,	100 bgs.
Dyestuffs —	
Alizarine	
Rotterdam,	19 cks. J. Rankine & Son
"	1 cs.
Aniline	
Amsterdam,	1 cs. J. Rankine & Son
Rotterdam,	6 brls. 7 bxs. 1 cs. 7 cks. "
Aniline Salts	
Rotterdam,	9 cks. J. Rankine & Son
Chrome Tanning Liquor	
Rotterdam,	1 ck. J. Rankine & Son
Cutch	
Rangoon,	350 bxs. P. Henderson & Co.
320 cs.	
Litharge —	
Rotterdam,	40 cks. J. Rankine & Son
Oxalic Acid —	
Rotterdam,	9 cks. J. Rankine & Son
Paraffin Wax —	
Baltimore,	qty.
Potash —	
Rotterdam,	53 cks. J. Rankine & Son
Potassium Oxalate —	
Rotterdam,	10 cks. J. Rankine & Son
Rosin —	
Savannah, G.A.,	3,880 brls.
Soap —	
Tarragona,	52 cs. J. Rankine & Son
Rotterdam,	31
Waste Salt —	
Hamburg,	1,671 bgs.

d—	50 pks.	J. Rankine & Son	Saltpetre— Hamburg, 30 cks. Tyne S. S. Co.
	30 pks.		Soap— Rotterdam, 2 cs. Tyne S. S. Co.
	71 bls.		Starch— Rotterdam, 88 cs. Tyne S. S. Co.
	150		Wood Pulp— Gothenburg, 7 pks.
	2,400		Zinc White— Rotterdam, 25 cks. Tyne S. S. Co.
	49 pks.	J. Rankine & Son	
	25 cks.		

TYNE.

ding November 20th.

h—	45 cks.	Tyne S. S. Co.
	(otherwise undescribed)	
	300 bgs.	Tyne S. S. Co.
	2 cks.	Tyne S. S. Co.
	4 brls.	"
	8 crts.	Tyne S. S. Co.
	1,930 t.	Tharsis Sulphur & Copper Co

GOOLE.

Week ending November 17th.

	Alizarine— Rotterdam, 143 cks.
	Alkali— Calais, 18 cks.
	Aniline— Hamburg, 27 cks. 2 cs.
	Antimony— Boulogne, 5 cks.
	Dyestuffs (otherwise undescribed) Boulogne, 130 cks. 1 cs. 71 pks.
	Rotterdam, 483 155.
	Farina— Hamburg, 600 bgs.

	Delfsryhl, 625
	Amsterdam, 5 cks.
	Glucose— Hamburg, 7 cks.
	Calais, 100 bgs.
	Glue— Boulogne, 8 bls.
	Rotterdam, 9 brls.
	Indigo— Dunkirk, 40 cks.
	Calais, 17
	Phosphate— Ghent, 2,000 bgs.
	Potash— Hamburg, 30 cks.
	Dunkirk, 19
	Calais, 44 drs.
	Pyrites— Huelva, 3,158 t.
	Saltpetre— Hamburg, 10 cks. 20 kgs.
	Rotterdam, 10 cs.
	Starch— Ghent, 92 bxs.
	Varnish— Boulogne, 10 cks.

Waste Salt—Hamburg, { 420 cks.
220 t.**GRIMSBY.**

Week ending November 20th.

	Albumen— Hamburg, 5 cks.
	Aniline— Antwerp, 2 cks. 48 cs. 27 pks.
	Caoutchouc— Rotterdam, 1 cs.
	Antwerp, 1
	Chemicals (otherwise undescribed) Rotterdam, 16 cks.
	Colours— Rotterdam, 3 cks.
	Hamburg, 2 13 cs. 5 pks.
	Antwerp, 29
	Dyestuffs (otherwise undescribed) Dieppe, 37 cks.
	Glue— Dieppe, 12 cks.
	Soap— Rotterdam, 11 cs.
	Zinc Ashes— Antwerp, 8 cs.

EXPORTS OF CHEMICAL PRODUCTSOF
THE PRINCIPAL PORTS OF THE UNITED KINGDOM.**LONDON.**

ding November 24th.

	5 t.	£30
	9 19 c.	128
	4 8	17
	8 cs.	£11
	2 t. 4 c.	62
	3	12
	(Liquid)—	
	4 c.	£16
	15 cs.	£21
	18 c.	21
	5 t.	130
	20	28
	30 pks.	180
	n Chloride—	
	2 t. 3 c.	£60
	1	31
	3	50
	9	14
	1	18
	31	31
	n Sulphate—	
	50 t.	£410
	5 2 c.	44
	25 7	210
	21 10	180
	s Ammonia—	
	20 cs.	£69
	1 t. 10 c.	£36
	1 t. 5 c.	£16
	15 15	231
	Powder—	
	2 c.	£6
	10 kgs.	£13
	1 t. 5 c.	£18
	25 cks.	68
	1 t.	15
	cid—	
	24 cks.	£135
	24	140
	50 dms.	138
	20	25
	50	140
	75	15
	48 cks.	186
	80	672
	da—	
	8 c.	9
	10	10
	1 t. 12	96
	11	17
	10 5	80

Chemicals (otherwise undescribed)

	Brisbane, 141 pks.	£278
	Adelaide, 63	218
	Stettin, 6 brls.	72
	Boston, 5 dms.	52
	Alexandria, 5 cks.	38
	Delagoa Bay, 10 cs.	91
	Karachi, 4	57
	Rotterdam, 10	80
	Pt. Elizabeth, 9	32
	Gothenburg, 30	23
	Dunkirk, 13 dms.	50
	Melbourne, 119	303
	St John, 3	27
	Hamburg, 19 kgs.	146
	Trinidad, 5 cs.	20
	Genoa, 26	171
	Dusseldorf, 11	53
	Cologne, 37	97
	Durban, 1	10
	Bombay, 40 17	15 kgs. 216
	Citric Acid—	
	Yokohama, 1 t. 10 c.	£175
	Calcutta, 1 cs.	5
	Hio, 10	58
	Nelson, 1 kg.	6
	Christiania, 5	30
	Colombo, 1	7
	Pt. Elizabeth, 4	25
	Amsterdam, 3	19
	Copenhagen, 10	59
	Cape Town, 1	7

Coal Products—

	Alizarine Wellington, 5 cks.	£144
	Reval, 6 cs.	318
	Aniline Boulogne, 1 ck.	£18
	Calcutta, 1 cs.	15
	Aniline Oil Genoa, 10 dms.	£400
	Anthracene Ludwigshafen, 383 cks.	£561
	Benzine Hong Kong, 5 cs.	£90
	Benzol Hamburg, 24 cks.	£97
	Rotterdam, 171	756
	Creosote Oil Boston, 50 cks.	£50
	Creosote Salts Philadelphia, 202 bgs.	£14
	Naphtha Philadelphia, 30 dms.	£380
	Pitch Alexandria, 200 cks.	£40
	New York, 2,478 bgs.	349
	Melbourne, 20 brls.	15
	Durban, 80 dms.	16
	Hochfeld, 219	2135
	Cette, 20	13
	Rangoon, 20	12½
	Bombay, 27	31
	Rotterdam, 99	190
	Dusseldorf, 2,480 t.	2,892
	Antwerp, 2,480 t.	2,892

Colombo.

	Pyridine Rotterdam, 13 cks.	£145
	Tar Delagoa Bay, 100 dms.	£7
	Bombay, 116 108 runlets.	184
	Cochin, 20 brls.	10
	Tar Oil Melbourne, 10 brls.	14
	Coal Products (otherwise undescribed) Trinidad, 12 brls.	£10
	Durban, 2 cs.	7
	Las Palmas, 8	8
	Copper Sulphate— Odessa, 25 t.	£428
	Paris, 20	340
	Cologne, 10	171
	Cette, 178 4 c.	3,052
	Hamburg, 5	84
	Treport, 5 4	83
	Copperas— Constantinople, 10 t. 18 c.	£22
	Cream of Tartar Sydney, 4 t. 10 c.	£356
	Hio, 1 10	127
	Fremantle, 5 3 cs.	35
	Yokohama, 2	170
	Wellington, 6	25
	Cyanides— Melbourne, 6 t. 2 c.	£490
	Disinfectants— Sydney, 40 dms. 15 cs.	£55
	Melbourne, 38 pks.	82
	Delagoa Bay, 23 4	34
	Cape Town, 21	27
	Bombay, 80 229	45 cks. 56
	Durban, 84	
	New York, 226	47
	Jamaica, 30 15	39
	Lime— St. Kitts, 8 t. 15 c.	£40
	Surinam, 5	20
	Manure— Ghent, 41 t. 16 c.	£23
	Morlaix, 112	224
	Demerara, 200	1,700
	Madras, 1 1	34
	Jersey, 238 8	764
	Phosphoric Acid— Demerara, 43 cks.	£137
	Phosphorus— Lisbon, 3 cs.	£42
	Philadelphia, 6 c.	66
	Oporto, 3	42
	Potash— Sydney, 2 t. 3 c.	£35
	New York, 8	37
	Potash Salts— Wellington, 3 t.	£252
	Potassium Bicarbonate— Yokohama, 10 c.	£14

Potassium Bichromate—

	Cosoli, 1 t. 2 c.	£20
	Potassium Chlorate— E. London, 20 kgs.	£37
	Potassium Chloride— Bombay, 10 cs.	£46
	Potassium Cyanide— Fremantle, 4 t. 14 c.	£275
	Rockhampton, 1 5	120
	Townsville, 15 18	1,315
	Sydney, 101 5 cs.	79
	New York, 7 100	1,252
	Perth, 2	205
	Potassium Nitrate— Sydney, 1 t. 2 c.	£22
	Potassium Prussiate— Montreal, 13 cks.	£206
	Saltpetre— M. Video, 1 t. 13 c.	£32
	Salts of Lime— New York, 1 t. 9 c.	£268
	Sheep Dip— Beira, 25 dms.	£7
	Gallegos, 18 t. 532 pks.	2,020
	Cape Town, 18 c.	12
	Falkland, 140 dms. 2 cks.	101
	Pt. Elizabeth, 500 cs.	625
	Soda Crystals— Sydney, 2 t. 6 c.	£8
	Trinidad, 2 3	6
	Sodium Bicarbonate— Calcutta, 2 c.	£5
	Barbadoes, 1 t.	7
	Sodium Hyposulphite— Fremantle, 1 t. 2 c.	£10
	Sulphur— Barbadoes, 1 t. 10 c.	£12
	Sulphuric Acid— E. London, 1 t. 10 c.	£30
	Superphosphates— Cape Town, 500 t.	£1,746
	Calicut, 10	36
	Auckland, 25	75
	Tartaric Acid— Townsville, 10 c.	£61
	Sydney, 1 t.	116
	Pt. Elizabeth, 1 1	7
	Yokohama, 1 11	179
	Bombay, 5 cs.	24
	Karachi, 20 10	188

LIVERPOOL.

Period ending November 24th.

	Acetic Acid— Lisbon, 30 t. 7 c. 2 q.	£9
	Alkali— Santander, 11 t.	£48

Alum—

Portland, O.,	26 t.	14 c.	£134
Syria,	6	2 q.	30
San Francisco,	21	18	110
Piræus,	4	1	19
Alexandria,	6	16	34
Bourgas,	5	3	23
Patras,	7	11	3
Sydney,	11	16	62
Dunedin,	10		3
Melbourne,	3	9	18

Aluminous Cake—

Dunedin,	5 t.	1 q.	£15
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Ammonia (Liquid)—

B. Ayres,	9 c.	1 q.	£11
Coquimbo,	6 dms.	1	2

Ammonium Acetate—

Piræus,	4 c.		£8
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Ammonium Carbonate—

Progresso,	1 c.	1 q.	£1
New York,	1 t.	5	33
B. Ayres,	2		67
Trieste,	1		24

Ammonium Chloride—

Larnaca,	1 t.	4 c.	£6
Rio de Janeiro,	1 t.		28
Hioho,	5		155
Kurrachee,	15		23
Bombay,	9		270
Genoa,	1		18
Barcelona,	1		28
Trieste,	3	9	108
Philadelphia,	24	11	542
Hamburg,	1		38
Gibraltar,	10		15
Patras,	7		10
Alexandria,	3		93

Ammonium Sulphate—

Leghorn,	9 t.	19 c.	2 q.	£79
Genoa,	8			72
Honolulu,	70			632
Bordeaux,	5			45
Norfolk, Va.,	101			909
Philadelphia,	50			440
Las Palmas,	2			18
Alicante,	8			66
Demerara,	150			1,317
Valencia,	251			2,210
Gd. Canary,	18			169
Cullera,	150			1,302
San Francisco,	152			1,332

Bleaching Powder—

Alicante,	30 cks.		
Baltimore,	21		
Boston,	574		
Corfu,	20		
Naples,	23		
New York,	26		
Oporto,	46		
Philadelphia,	46		
Rio de Janeiro,	74		
St. John's,	21		
Sydney,	55		
Syria,	6		
Venice,	11 c.		

Boracic Acid—

Odessa,	11 c.		£16
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Borax—

Malaga,	1 t.	3 c.	1 q.	£22
Antwerp,	2	19		47
Portland, M.,	15	6	3	244
Constantinople,	7	14		10
Genoa,	7	17		115
Melbourne,	3	2		47
Sydney,	4			60
Hamburg,	7	19		116
St. John's, N.B.,	3			41
Barcelona,	5	1		70
Galatz,	1			15
Bremen,	10			8
Naples,	10			8
Dunedin,	10			8

arbollic Acid—

Constantinople,	1 t.	2 c.	3 q.	£43
Kobe,	2			131
Yokohama,	2	10		163
Singapore,	2		3	5
Melbourne,	30 dms.			26
Piræus,	2			10
Bombay,	4			23
Patras,	8			10
Hamburg,	22 t.	13		1,446
New York,	3	5		329
Acerra,	15 cks.			10
	12 dms.			

Caustic Soda—

Baltimore,	50 dms.		
Barcelona,	302		
Bilbao,	60		
Boston,	200		
B. Ayres,	30		
Cadiz,	25		
Caltutta,	20		

Cartagena,

Copenhagen,	5 brls.		
Corfu,	27 kgs.		
Genoa,	30		
Ghent,	5		
Hamburg,	60		
Hioho,	70		
Piræus,	575		
Hong Kong,	35		
Honolulu,	10		
Karachi,	11		
Malaga,	50		
Manila,	209		
New York,	8		
Para,	30 cs.		
Pt. Elizabeth,	60		
Portland, M.,	10		
Rangoon,	18		
Rio de Janeiro,	15		
St. John's,	30		
Samarang,	32		
San Sebastian,	50		
Seville,	35		
Sydney,	35		
Tampico,	8		
Vera Cruz,	5		

Chemicals (otherwise undescribed)

Piræus,	1 t.	5 c.	1 q.	£28
New York,	11			356
Hamburg,	17			23
Odessa,	2	2	3	57
Philadelphia,	13	7		412
Bremen,	18			26
Venice,	1	5		36
Rotterdam,	2	16		81
Leghorn,	4			5

China Clay—

Barcelona,	256 cks.		
Bombay,	164		
Boston,	1,603		
Calcutta,	160		
Norfolk, Va.,	40		
Pernambuco,	108		
Portland, M.,	1,100		
Portland, Or.,	751		
Rio de Janeiro,	65		
Sacoma,	200		

Chromium Oxide—

Antwerp,	2 c.	1 q.	£14
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Chromium Trioxide—

Hamburg,	8 c.		£24
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Citric Acid—

Santos,	5 c.		£42
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Coal Products—

Aniline Oil	1 dm.		
Fiume,	10		
Philadelphia,	86 cks.		
Aniline Salts	21		
Boston,	86 cks.		
Philadelphia,	21		
Pitch	£530		
Cette,	10 brls.		
Tar	50		
Cabadello,	10 brls.		
Honolulu,	50		

Copper Sulphate—

Ceara,	5 c.	2 q.	£5
Para,	5	2	5
Cette,	120 t.	2	2,040
Hamburg,	4	19	77
Samarang,	5	17	3
Newfairwater,	5	3	80
B. Ayres,	19	3	20
Sydney,	10		157
Rio de Janeiro,	10	2	10
Victoria, B.C.,	8	2	7
Alexandria,	1		17
Syria,	2	19	3
Antwerp,	4	18	3
Dunedin,	10		8
Patras,	181	6	2,827
Bordeaux,	64	8	701
Bourgas,	2	4	34

Cream of Tartar—

Tampico,	6 c.		£23
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Disinfectants—

Madras,	5 c.		£7
Calcutta,	4 t.	16	1 q.
	20 cks.	4 cs.	77

Guano—

Seville,	7 t.	7 c.	£47
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Hydrochloric Acid—

Coquimbo,	10 cs.		£13
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Iron Oxide—

New York,	4 c.	2 q.	£4
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Lime—

Demerara,	128 t.	10 c.	£301
Bey Beach,	18		28
Conakry,	3	19	1 q.

Magnesium Chloride—

Ghent,	5 c.		£2
Bombay,	1 t.	2 q.	4

Magnesium Sulphate—

Rio de Janeiro,	100 kgs.		
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Nitric Acid—

Coquimbo,	10 cs.		£27
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Oxalic Acid—

M. Video,	6 c.		£10
Piræus,	5		10
Boston,	15 t.	10	3 q.

Paint—

Callao,	25 cs.		
Hong Kong,	10 dms.		
Lisbon,	10 pks.	51	
Manaos,	9 cks.		
Maracaibo,	396		
New York,	5 brls.		
Pernambuco,	3		
Smyrna,	1		
Tampico,	19 pks.		
Valparaiso,	269		

Painters' Colours—

Alexandria,	65 cks.		
Antwerp,	10		
Bahia,	30 kgs.		
Baltimore,	215		
Boston,	315 pks.		
B. Ayres,	65		
Pernambuco,	20		
Pt. Natal,	31 cs.		
Rio de Janeiro,	3 brls.		
Rotterdam,	35		
Santos,	9		

Paraffin Wax—

Bari,	3 bgs.		
Genoa,	30		
Naples,	30		
Piræus,	10 pks.		
Salonica,	10		
Trieste,	13 cs.		

Phosphorus—

Rio de Janeiro,	5 c.		£70
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Potash Salts—

Guaymas,	12 t.	6 c.	£980
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Potassium Bicarbonate—

New York,	1 t.	10 c.	£45
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Potassium Bichromate—

Antwerp,	9 t.		£397
St. John's, N.B.,	5 c.	2 q.	10
Ancona,	14	1	102

Potassium Carbonate—

B. Ayres,	10 c.		£15
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Potassium Chlorate—

Naples,	1 t.		£36
Yokohama,	5		170
Shanghai,	8		270
Vera Cruz,	10 c.		17
Passages,	4		8
Sydney,	5		166
New York,	1		30
Hioho,	30		963
Rotterdam,	3	1	102
Hamburg,	4	15	154

Potassium Cyanide—

New York,	5 t.		£490
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Potassium Prussiate—

Genoa,	3 t.	18 c.	2 q.	£22
Santos,	5	1		21

Potassium Stannate—

Demerara,	3 t.	8 c.		£129
-----------	------	------	--	------

Salt—

Abonnema,	1,000 bgs.		
Algoa Bay,	100 cs.		
Antwerp,	240 t.		
Brass,	18		
Brisbane,	16	10 c.	
B. Ayres,	12	7	
Buguma,	35	14	
Cabenda,	10		
E. London,	40		
Kingston,	60		
Landana,	13	15	
Newcastle,	100		
N. Orleans,	1 cs.		
Opobo,	25		
Para,	100	2	
Rio de Janeiro,	2	2 c.	
Sydney,	561		
Trinidad,	19		
Valparaiso,	14	19	

Salt Cake—

Terneuzen,	200 t.		£258
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Saltpetre—

Tampico,	1 t.	15 c.	2 q.	£35
Iloilo,	12	3		—
Para,	5			5
Patras,	10			12
B. Ayres,	15	2		30

Sheep Dip—

Savanilla,	9 c.		£7
B. Ayres,	36 t.	8	752

Soap—

Alexandria,	55 bxs 8 cs.
-------------	--------------

ur—		
ita,	6 t.	£29
m,	75	3 c.
r—	1	1 q.
is,	11 c.	£28
ric Acid—		
zaire,	19 c.	3 q.
oon,	2 cs.	£127
sh—		
ndria,	2 cs.	
ella,	2 bxs.	
a,	6 cks.	
le Janeiro,	16 pks.	
Lead—		
ambuco,	20 kgs.	
Chloride—		
a,	32 t.	£369
i,	1	4 c.
a,	1	8
n,	4	10
ay,	10	17

LINCHESTER.

Week ending November 24th.

onium Carbonate—		
rdam,	6 cks.	4 cs.
r Sulphate—		
ndretta,	2 cks.	

lseed Oil—		
	40 brls.	

erp,	10 cks.	
rdam,	12	
esia—		
	9 tcs.	
ha—		
rt,	35 cks.	
	842 t.	
w—		
gne,	1 ck.	
il—		
rt,	2 cks.	

HULL.

Week ending November 20th.

	50 bgs.	200 kgs.
	110 cks.	

urg,	15	
onium Sulphate—		
erp,	300 bgs.	

hing Powder—		
York,	145 cks.	

lic Acid—		
rdam,	93 cks.	

ic Soda—		
	135 dms.	

icals (otherwise undescribed)		
erp,	1 dm.	
en,	15 pks.	

aux,	30 cs.	
iania,	12 cks.	61

hagen,	25	13 pks.
burg,	3	1

burg,	2	15
urg,	6	147
York,	12	

	38	100
rdam,	53	40

holm,	3	1 dm.
lseed Oil—		

erp,	1,195 c.	
rdam,	1,504	

n,	10	
m,	101	

irk,	33	
urg,	2,863	

rdam,	583	
holm,	51	

	220	
ite—		
urg,	15 cks.	

iffs (otherwise undescribed)		
iania,	13 bgs.	

	1 cs.	
--	-------	--

Linseed Oil—

Bergen,	138 c.	
Christiansund,	35	
Christiania,	89	
Christiansand,	45	
Drontheim,	52	
Hamburg,	713	
New York,	177	
Stockholm,	41	

Painters' Colours—

Antwerp,	7 cks.	3 cs.
Amsterdam,	6	
Bergen,	1	19 dms.
Bordeaux,	6	40
Christiania,	1	60 pks.
Christiansand,	22	1
Copenhagen,	1	4 dms.
Danzig,	5	
Drontheim,	23	
Ghent,	3	13 pks.
Helsingfors,	18	5 dms.
Hamburg,	20	5.
Konigsberg,	10	
New York,	3	2
Norwegian,	7	40 pks.
Reval,	3	
Rouen,	7	
Stockholm,	192	1
Stettin,	263	

Paraffin Wax—

Liban,	5 bgs.	
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Pitch—

Antwerp,	1 ck.	212 t.
Dunkirk,	25	210
Rouen,	12	
	75 bgs.	

Salt—

Antwerp,	300 bgs.	5 cs.
Reval,		

Starch—

Christiania,	1 cs.	
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Tallow—

Amsterdam,	15 cks.	
Gothenburg,	44	
Stockholm,	12	

Tar—

Amsterdam,	12 cks.	
Christiania,	10	
Dunkirk,	30	

Varnish—

Bremen,	3 cks.	
Stockholm,	3	5 cs.
Stavanger,	465	

Witherite—

Stettin,	83 cks.	
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GLASGOW.

Week ending November 25th.

Ammonium Carbonate—

Rouen,	1 t.	3 3/4 c.
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Ammonium Sulphate—

Hamburg,	50 t.	4 c.
Rotterdam,	134	8 3/4
Demerara,	25	5
U.S.A.,		

Borax—

Johannesburg,		£75
Transvaal,		£27 14s.

Carbolic Acid—

Christiania,		£5
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Caustic Soda—

Canada,	34 t.	10 c.
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Chemicals (otherwise undescribed)

Rotterdam,		£64
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Chrome Alum—

Madras,		£30
---------	--	-----

Coal Products—

Allzarine		
U.S.A.,		£35

Aniline

Calcutta		£45
----------	--	-----

Aniline Salts

U.S.A.,		£72
---------	--	-----

Benzol

Rotterdam,		£25
------------	--	-----

Hamburg,

5 t.	7 c.	
------	------	--

Creosote Oil

U.S.A.,		£65
---------	--	-----

Pitch

Hamburg,	10 t.	
Gothenburg,		£150
Amsterdam,	300	
Dieppe,	710	
Bombay,		20

U.S.A.,

282		
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Tar

Bombay,		£63
U.S.A.,		95

Tar Oil

Hamburg,		£20
----------	--	-----

Tar and Pitch

Calcutta,		£37 10s.
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Coal Products (otherwise undes.)—

Rotterdam,		£478
Amsterdam,	2 t.	7 c.

Extracts—

Canada,		£643
U.S.A.,		103

Lead Nitrate—

New York,		£180
-----------	--	------

Linseed Oil—

Cape Town,	1 t.	19 3/4 c.
Rio de Janeiro,	77	10
Trinidad,		15 3/4

Logwood—

Canada,		£41
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Manganese—

Paris,		£50
Basle,	10 t.	3/2 c.

Manure—

Jersey,	330 t.	11 3/4 c.
Trinidad,	4	12 3/4

Muratic Acid—

Trinidad,		£27 13s.
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Paint—

Singapore,		£125
Cape Colony,		21

Painters' Colours—

Calcutta,		£218
Cape Town,	qty.	
Rotterdam,		9
Rio de Janeiro,		96
Trinidad,		

Paraffin Wax—

Christiania,		£25
Skien,		8
Cape Town,		£27 10s.
Antwerp,		£55
Bombay,		60

Phosphates—

Trinidad,	4 t.	3 3/4 c.
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Potassium Bichromate—

Paris,		£210
Rouen,		481

Salt—

Trinidad,	48 t.	17 1/2 c.
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Sodium Bichromate—

Rouen,	11 t.	10 3/4 c.
U.S.A.,	9	10 3/4

Starch—

Rio de Janeiro,		£22
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Sulphur—

Demerara,	3 t.	18 c.
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Sulphuric Acid—

Colombo,		£20
Madras,		193

Tallow—

Rotterdam,	12 t.	14 c.
Trinidad,	1	15 3/4

Treacle—

Christiania,	59 t.	2 c.
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Varnish—

B. Ayres,		£30
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White Lead—

B. Ayres,		£107
Transvaal,		20

TYNE.

Week ending November 20th.

Alkali—

Christiania,	6 t.	10 c.
Reval,	28	2
Rotterdam,	4	3
Gothenburg,	5	4
Amsterdam,	18	3

Aluminous Cake—

Copenhagen,	60 t.	
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Ammonium Carbonate—

Halmstad,	1 t.	
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Ammonium Chloride—

Gothenburg,	1 t.	7 c.
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Antimony—

Hamburg,	5 t.	
Christiania,	1 t.	10 c.
Rotterdam,	11	

Arsenic—

Gothenburg,	17 c.	
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Barium Binocide—

Antwerp,	10 t.	17 c.
Amsterdam,	19	8

Barium Carbonate—

Odense,		1 c.
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Benzine—

Bergen,		7 c.
---------	--	------

Bleaching Powder—

Antwerp,	30 t.	19 c.
Hamburg,	110	3
Copenhagen,	62	1
Gothenburg,	31	2
Christiania,	20	3
Rotterdam,	24	1
Amsterdam,	43	5

Carbolic Acid—

Amsterdam,	11 t.	10 c.
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Caustic Soda—

Antwerp,	23 t.	
Hamburg,	50	4 c.
Copenhagen,	10	1
Gothenburg,	19	3
Christiania,	9	17
Reval,	30	
Rotterdam,	10	3

Chemicals (otherwise undescribed)

Montreal,	12 t.	1 c.
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Litharge—

Copenhagen,	1 t.	8 c.
-------------	------	------

Magnesia

Hamburg,		9 c.
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Manganese Ore—

Cette,	2 t.	3 c.
--------	------	------

Paint—

Rotterdam,		10 c.
Antwerp,		10
Hamburg,	1 t.	

Soda—

H. Porsgrund,	340 t.	
Christiansand,	10	6 c.
Gothenburg,	24	17
Christiania,	40	15
Svendborg,	9	
Rotterdam,	42	8
Bergen,	1	14
Amsterdam,	4	

Soda Ash—

Gothenburg,	5 t.	10 c.
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PRICES CURRENT.

WEDNESDAY, DEC. 1ST, 1897.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.B. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—		£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/9	&	8/9
" Glacial	"			40/-
Arsenic S.G., 2000	"	1	4	0
Fluoric	per lb.	0	0	3 1/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0	10
" (Cylinder), 30° Tw.	"	0	3	0
Nitric 80° Tw.	per lb.	0	0	1 1/4
Nitrous	"	0	0	1 1/4
Oxalic	nett	0	0	3 1/2
Phosphoric, 1750°	"	0	0	11 1/2
Picric	"	0	0	11
Sulphuric (fuming 50 %)	per ton	15	10	0
" (monohydrate)	"	5	10	0
" (Pyrites, 168°)	"	3	0	0
" " 150°	"	1	5	0
" (free from arsenic, 145°)	"	1	7	6
Sulphurous (solution) S.G. 1025	"	3	0	0
Tannic (pure)	per lb.	0	1	2 1/2
Tartaric	"	0	1	1 1/2
Arsenic, white powdered	nett per ton	21	15	0
Alum (loose lump)	"	4	10	0
Alumina Sulphate (pure)	"	4	2	6
Aluminoferrous	"	2	3	6
Aluminium (Ingot metal 98/99 1/4 %)	nett	148	0	0
Ammonia, Anhydrous	per lb.	0	1	3
" 880 = 28° B.	"	0	0	2 1/4
" = 24° B.	"	0	0	1 1/4
" Carbonate	nett	0	0	3
" Muriate	per ton	18	0	0
" (sal-ammoniac) 1st & 2nd	per cwt.	33/-	&	31/-
" Nitrate	per ton	31	0	0
" Phosphate	per lb.	0	0	3 1/4
" Sulphate (grey) London	per ton	8	17	6
" (grey) Hull	"	8	17	6
Aniline Oil (pure)	per lb.	0	0	7 1/4
Aniline Salt	"	0	0	6 1/2
Antimony	per ton	29	5	0
" (tartar emetic)	per lb.	0	0	8
" (golden sulphide)	"	0	0	10
Barium Chloride	per ton	6	15	0
" Carbonate (native)	"	3	10	0
" Sulphate (native levigated)	"	42/6	to	65/-
Bleaching Powder, 35 %	nett	6	2	6
" Liquor, 7 %	"	3	10	0
Bisulphide of Carbon	"	12	0	0
Chromium Acetate (crystal)	per lb.	0	0	6
Calcium Chloride	per ton	2	5	0
China Clay (at Runcorn) in bulk	"	15/-	to	30/-
Coal Tar Products and Dyes:—				
Alizarine (artificial) 20 %	nett per lb.	0	0	6 1/4
Magenta	"	0	3	9
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0	0	6
Benzol, 90's	per gallon	0	1	10
" 50/90	"	0	2	0
Carbolic Acid (crude 60°)	per gallon	0	2	0
" (crystallised 40°)	per lb.	0	0	7
" (liquid 95/97 %)	per gallon	0	1	0
Creosote (ordinary)	"	0	0	2 1/2
" (filtered for Lucigen light)	"	0	0	3
Crude Naphtha 30 % @ 120° C.	"	0	0	10
Grease Oils, 22° Tw.	per ton	2	15	0
Pitch, f.o.b. Liverpool or Garston	"	1	0	0
Solvent Naphtha, 90 % at 160°	per gallon	0	1	8
Copper	per ton	48	0	0
" Sulphate	"	16	5	0
" Oxide (copper scales)	"	44	10	0
Glycerine (crude)	"	24	10	0
" (distilled S.G. 1250°)	"	40	0	0
Iodine	nett, per oz.	0	0	7 1/2
Iron Sulphate (copperas)	per ton	1	10	0
" Sulphide (antimony slag)	"	2	0	0
Lead (sheet)	"	14	5	0
" Litharge Flake (ex ship)	"	16	0	0
" Acetate (white ")	"	23	0	0
" " brown ")	"	17	0	0
" Carbonat: (white lead) pure	"	17	0	0
" Nitrate	"	20	0	0
Lime, Acetate (brown) (ex ship)	per ton	5	12	0
" (grey) (ex ship)	"	8	6	0
Magnesium (ribbon and wire)	per oz.	0	2	0
" Chloride (ex ship)	per ton	2	10	0
" Carbonate	per cwt.	1	17	6
" Calcined Magnesia	per ton	8	0	0
" Sulphate (Epsom Salts)	per ton	2	15	0
Manganese, Sulphate	"	16	0	0
" Borate	per cwt.	2	10	0
" Ore, 70 %	per ton	3	10	0
Methylated Spirit, 61° O.F.	per gallon	0	1	8
Naphtha (Wood), Solvent	"	0	2	9
" " Miscible, 60° O.F.	"	0	3	7
Oils:—				
Cotton-seed	per ton	15	10	0
Linseed	"	15	15	0
Stearine	per ton	22	0	0
Phosphorus (yellow)	per lb.	0	2	0
" (red)	"	0	2	9
Potassium (metal)	per oz.	0	3	7
" Bichromate	nett per lb.	0	0	4 1/4
" Carbonate, 90% (ex ship)	per ton	16	10	0
" Chlorate	per lb.	0	0	3 1/2
" Cyanide, 98%	"	0	1	1
" Hydrate (Caustic Potash) 90 %	per ton	23	10	0
" " (Caustic Potash) 75/80 %	"	19	15	0
" Potash Hydrate Liquid 50 %	"	11	5	0
" Nitrate (refined)	per cwt.	1	1	6
" Permanganate	per cwt.	3	15	0
" Prussiate Yellow	per lb.	0	0	6 1/2
" Sulphate, 90 % (ex ship)	per ton	9	15	0
" Muriate, 80 % (do.)	"	8	10	0
Silver (metal)	per oz.	0	2	3 1/2
Sodium (metal)	per lb.	0	2	9
" Carb. (refined Soda-ash) 48 %	nett per ton	4	15	0
" " (Caustic Soda-ash) 48 %	"	4	5	0
" " (Carb. Soda-ash) 48 %	"	4	0	0
" " (Alkali) 58 %	"	3	17	0
" " (Soda Crystals)	"	2	5	0
" Acetate (ex-ship)	"	10	10	0
" Arseniate, 45 %	"	14	7	6
" Chlorate	per lb.	0	0	4 1/2
" Borate (Borax)	nett, per ton	14	0	0
" Bichromate	per lb.	0	0	3 1/2
" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	"	8	10	0
" " (74 % Caustic Soda) " " "	"	8	2	6
" " (70 % Caustic Soda) " " "	"	7	5	0
" " (60 % Caustic Soda) " " "	"	6	5	0
" " (pure liquor 90° Tw.) " " "	"	3	12	6
" " 77/78 % powdered (99 % hydrate)	"	12	10	0
" Bicarbonate	"	6	10	0
" Hyposulphite	"	5	5	0
" Manganate, 25%	"	15	0	0
" Nitrate (95 %) ex-ship Liverpool	per cwt.	0	7	7 1/2
" Nitrite, 98 %	per ton	26	10	0
" Phosphate	"	9	10	0
" Silicate (glass)	per ton	4	10	0
" " (liquid, 100° Tw.)	"	3	7	6
" Stannate, 40 %	per cwt.	3	2	9
" Sulphate (Salt-cake)	per ton	0	19	0
" " (Glauber's Salts)	"	1	7	6
" Sulphide	"	6	15	0
" Sulphite	"	5	0	0
Strontium Hydrate, 100%	"	10	15	0
Sulphocyanide Ammonium, 95 %	per lb.	0	0	5 1/2
" Barium, 95 %	"	0	0	4
" Potassium	"	0	0	6 1/2
Sulphur (Flowers)	per ton	7	10	0
" (Roll Brimstone)	"	6	10	0
" Brimstone: Best Quality	"	4	10	0
Superphosphate of Lime (26%)	"	2	5	0
Tallow (Beef)	"	18	10	0
Tin Crystals	per lb.	0	0	4 1/4
" English Ingots	per ton	65	0	0
Zinc (Spelter)	"	18	5	0
" Chloride (solution, 100° Tw.)	"	5	15	0
" Sulphate, Crystal	"	5	15	0

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551.

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Contents.

	PAGE		PAGE
ices	369	More Low Flash Chicanery	374
Weaver Navigation.....	370	Mersey and Irwell Joint Committee	375
Correspondents.....	370	Trade Notes	375
List	371	Tar and Ammonia Products	376
Latest Complete Speci.....	371	Miscellaneous Chemical Market	376
on Technical Education	371	Report on Manure Material	376
Companies	372	Liverpool Oil and Colour Market.....	376
Chemical Industry	372	Hull Paint, Oil, and Colour Report	377
Chamber Space in	373	West of Scotland Chemicals	377
Manufacture.....	373	Tyne Chemical Report	377
Correspondence.....	373	New Companies.....	377
istics	373	Gazette Notices.....	377
Manufacturers and	373	Imports.....	378
Rules".....	374	Exports	380
		Prices Current	384

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SALE.—A Set of Pyrites Burners, two rows of 4, back to back; in excellent condition. Ironwork by Sproat, Marly, & Co., Leamington-on-Tyne.—Apply to the Wednesfield Chemical Syndicate, Wolverhampton, where above may be seen.

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Advertisements intended for insertion in the current week's issue should be sent to the office by **Thursday morning** at the latest.

CURRENT TOPICS.

SILVER OR GOLD.

PROMINENCE has been given this week in the lay press to the product being introduced by Dr. Emmens, of New York, as argentaurum gold. Its existence has been known to us for a long time, and it has also been advertised for sale in a scientific paper of repute, but up to now the particulars of how the thing is done have been scanty, and as matters stand at present they are hardly less so. As far as can be gathered, hammering the silver at a very low temperature seems to be an essential part of the transmuting process, and Mexican dollars are preferred.

Far be it from us to deny the scientific interest of the results that Dr. Emmens obtained. What with Argon, Helium, and Rontgen rays, it is hardly fair to be too sceptical. The United States Assay Office has paid hard cash for a nugget of the gold made from silver. Seeing how far matters have been carried, there are presumptive grounds for giving Dr. Emmens a full, fair, and even lenient hearing, but we contend that it is hostile to the interests and dignity of science for the matter to be placed unreservedly in the hands of the public, garnished with the glowing possibilities that will spring from every daily journalist's imagination.

Dr. Emmens has taken a reassuring method of introduction, but we note there is reference to the fact that about 26 % of the ingot of argentaurum gold is still composed of silver after the aurifying treatment. The U.S.A. Assay Office is a good reference, yet they do funny things in the U.S.A. Patent and other public offices; and we have not forgotten the *Times* and Piggott over the Parnell case; neither must the electric sugar refining process, or the first artificial diamonds, be put entirely out of remembrance.

Putting aside the scientific interest of the question—which is indisputable—and taking a commercial view, it seems strange that Dr. Emmens did not first retire to a quiet spot in Mexico, where he could have obtained the desirable pure silver Mexican dollars, and have started a little Klondike, unlimited, of his own. After making his pile he could have augmented it greatly by offering the product to the public. But he seems to have reversed the process.

Commercially, we do not anticipate a sudden depreciation in the value of gold and an appreciation of silver. Scientifically, we are interested.

THE ABSORBED OXYGEN TEST.

Last August we urged water analysts to endeavour to arrive at conformity in regard to procedure and interpretation, and it is to be hoped that the discussion raised at the last meeting of the Manchester Section of the Society of Chemical Industry will lead to some such steps being taken.

The incidents that led up to the matter will be found in our report of the meeting, and the correspondence column this week. At present all we can do is to bring the facts of the

case into focus. Briefly it appears that the Cheshire County Analyst, differing systematically in his absorbed oxygen results on Salford effluents, applied to the Mersey and Irwell Joint Committee (through the Chairman of the Salford Rivers Committee) for particulars of their test. He was referred to certain evidence given in Court. The County Analyst failed to find any information in the evidence, and finally, by appealing to the Chairman of the Joint Committee, obtained particulars of the test. As our columns show this week what the County Analyst could not find, Mr. Grimshaw found after the meeting, and modified his condemnation of the Joint Committee's discourtesy accordingly. But the facts of the case do not end here, because on closer investigation we find that the reference given in the evidence to Sutton's book on volumetric analysis does not clear the matter up. We are acquainted with the details of the Mersey and Irwell Joint Committee's test as described in the written statement issued on the edict of their chairman, and in one of the most important points—the time—it differs from the Tidy-Frankland test and the modification of the Water Committee of the Society of Public Analysts, both of which are described. What is more, the practice of making a three minutes' test and a four hours' test as now claimed by the Joint Committee is a departure from their method a year or two ago. The reference to the evidence given in Court is therefore still shown to be inadequate in spite of Mr. Grimshaw's partial exoneration.

All this points to two things. First, how important it is that the matter should be dispassionately discussed at an early meeting of the Society of Chemical Industry, in the presence of as many water analysts as possible; and, secondly, how much more courteous and dignified it would have been for the Joint Committee to have furnished particulars at once, and at first hand, directly they were asked. What reason was there to the contrary?

THE RIVER WEAVER NAVIGATION.

THE annual meeting of the trustees of the River Weaver Navigation was held at Northwich last week. Colonel France-Hayhurst presided, and there was a large attendance of members, the traders (salt and chemical manufacturers), the County Council, and the old trustees being fully represented. The annual report set forth that the receipts on revenue account for the year ended the 31st March amounted to £48,180., showing a decrease on the receipts of 1896 of £3,819. The expenditure amounted to £46,251., showing a decrease of £5,025. The amount appearing against Parliamentary and law expenses (nearly £2,000.) will almost entirely disappear from the accounts during the current year. The traffic on the Weaver and the Weston Canal reached 1,168,169 tons (a falling off of 88,976 tons on the corresponding period), and the tolls came to £41,504., or £2 570. less than in 1896. The traffic handled at the Weston docks amounted to 169,143 tons, a reduction of 15,761 tons, and the revenue was diminished by £912. From the schedule of tonnage on the Weaver proper, it appeared that of white salt there had been a falling off of 40,009 tons and £1,666. in tolls; rock salt, 45,314 tons and £946. less revenue; chemicals, 16,437 tons less and a reduction of £685. in the tolls. There was also a falling off in coal, crates, and pottery materials, and an increase of 28,974 tons and £1,311. revenue in "sundries." The principal outlay of capital during the year has been as follows:—Construction of new warehouses at Weston Point and Anderton, the purchase of Anderton Island from Lord Mansfield, provision of a condensing and electric power plant at Anderton, and the extension of the Weston Point Wharf, giving accommodation for an additional 4,000 tons. The mortgage debt had been reduced by £8,258., and now stood at £180,365., in addition to which there was a bond of £5,000. (repayable before November, 1,900) held by the bank. The question of finance had engaged the attention of a special committee, and all the annuitants had agreed to the commutation of their annuities at 3½ per cent. Those holding £82,561. agreed to relend for 30 years at 3½ per cent., but owners of £97,807. refused to renew. After consulting an actuarial expert the Committee approached the County Council, with

the result that that body had guaranteed a loan of £60,000., which trustees required to carry out their statutory and other engagements. £35,000. had been borrowed at 3 per cent. for thirty years, and the whole of this sum was being expended in the improvement of the Navigation. Messrs. Handyside, of Derby, had contracted to erect two swing bridges at Northwich for £16,687., and the first bridge would be completed by the 31st January. Messrs. Beckett and Co., of Hartford, had contracted to make the roads for £3,018. The Trustees' own employes were carrying out other works. A vacancy created on the Trust by the resignation, through ill-health, of Mr. A. T. Wright, a County Council representative, had been filled by the election of Mr. J. Charlton Parr. The capital expenditure account of the Trust showed total assets £540,519., and liabilities (mortgages, revenue applied towards capital expenditure, etc.), £457, less than the assets. Under various Acts the Trustees had obtained powers to borrow £610,000., and they had raised £315,000., in addition to which £25,000. of the £60,000. guaranteed by the County Council had been taken up.

The Engineer's annual report gave details of the improvement works which had been taken in hand. It also stated that by the removal of Newbridge Lock (Winsford) and the erection of the swing bridges, the salt traffic from Winsford will be expedited from thirty minutes to an hour, and vessels carrying nearly double the tonnage of the present craft will be able to use the river for the whole length.

The Chairman, in moving the adoption of the reports, said the loss of revenue, amounting to £4,000., had been due to an almost all round reduction in the tonnage of goods passing over the Navigation, and markedly so in that of white salt and rock salt, which had always been and was still the principal source of revenue of the Trust. Up to date, the receipts for the year fell short of the estimate, which was £47,000., by £1,500.; but the proportion of expenditure for repairs, maintenance, etc., estimated at a total of £42,000., had not been exceeded. The expenditure figures which he had given did not include outlays on improvements and new works which went to enhance the capital value of the Navigation. Under this head £4,300. appeared in the accounts, as against £1,900. for the renewal of river piling, new warehouses, and the purchase of land. A loan for £35,000. had been arranged, and excellent progress was being made with the new works. It was expected that the new swing bridges would be complete and open for traffic by the end of August. Colonel Morrison regarded the report as eminently satisfactory, with the exception of the reduction of traffic. Mr. T. W. Killick (the vice-chairman) seconded the adoption of the report, which was unanimously carried. Colonel France-Hayhurst was re-elected as chairman, and Mr. T. W. Killick was re-appointed vice-chairman. The Parliamentary, New Works, and Finance Committees were re-elected, the following names being added to the latter:—Major H. Wilbraham, Mr. H. Falk, and Mr. J. Edwards, C.C. Messrs. Ashworth, Moseley, and Co., of Manchester, were re-appointed auditors, their remuneration being £130. per annum.

ANSWERS TO CORRESPONDENTS.

- L. V. (Paris).—It is used in the dyeing and printing industries mainly, and also in the weighting and finishing of silk. We cannot give closer details.
W. P. A.—1. Not in our line at all. 2. It has not been commercially successful up to now.
D. C.—We are in want of them ourselves.
J. N.—The matter has not been forgotten, but the chances of immediate steps being taken are remote.

RUSSIAN PETROLEUM PRODUCTION.—The European Petroleum Company, Limited, has received telegraphic advice from its Baku manager that the production for the last week, was 139,112 poods, or 2,243 tons.

PETROLEUM IN JAVA.—According to a French Consular report, there are in the districts of Lidah and Koetei 40 wells, with an average daily production of 19,800 gallons of oil, which could easily be increased to 25,000 gallons. Recent reports are to the effect that two new wells have been discovered, producing some 2,400 barrels per day additional. In the district of Panolan there are 15 wells, the largest of which has a daily production of 2,400 barrels. The wells of Tinawen have been but little exploited. A company has obtained a ten-year concession for this district, and the probable yield is estimated at 1,600 cases a day. There are two refineries and another in process of construction. The paraffin factory at Ploentoeran, which has a capacity of production of 6,000 pounds a day, is only partially in action. A factory at Wonokranio supplies all the oils necessary for the sugar refineries and for the railroads of Java. Statistics for the last eight years show that the production of refined petroleum on this island has increased from 8,000 cases in 1889 to 1,250,000 cases in 1896. During the month of January, 1897, the production reached 108,007 cases, against 87,577 cases in January, 1896. The American trade is seriously threatened by the exports of petroleum from Java, which, on account of its geographical position, finds the cost of transportation to the Eastern markets of little account.

The Patent List.

It is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of Davis and Alfred R. Davis, who report professionally value of Chemical Patents.

INVENTIONS FOR ENGLISH LETTERS PATENT.

Treatment. H. Morris. 27,306. November 22.
for Sewage Treatment. D. Cameron, F. J. Commin, and A. J. 27,349. November 22.
cers. B. Talbot and W. B. Hughes. 27,379. November 22.
rbide Furnaces. H. S. Riant. 27,428. November 23.
Gold by Electrolysis. O. March. 27,508. November 23.
ection. C. B. Shrewsbury. 27,550. November 23.
nts in the Electrolysis of Salts. J. W. Swan and A. C. Hyde. November 23.
ewage. E. S. Seaven. 27,646. November 24.
ttries. W. H. Lane. 26,683. November 24.
and Heating, etc., Gases. J. H. Carpenter. 27,711. Nov. 25.
suming Furnaces. H. Werner. 27,766. November 25.
re of Coke. J. Bowing. 27,869. November 26.
able Wood. F. M. Lyte. O. J. Steinhart and W. H. Wickham. November 27.
from Sawdust, Shavings, etc. R. Meyer. 27,960. Nov. 27.

ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

Abstracts are specially prepared for the Chemical Trade Journal, RIGHTS of publication are RESERVED. This is the earliest abstracts of Chemical and allied patents accessible to the

nts in Obtaining Cyanides and other Products for Blast es. A. K. McKosh, Gartsherrie Ironworks, Coatbridge, N.B. Eng. 1. Jan. 6, 1897.

ent is hardly of a chemical nature. It refers mainly to a pipes for collecting the gases. A number of pipes are introduced through the boshes of the furnace about 8 feet above the tuyere below the deoxidising zone. These pipes are joined into a ring the exterior of the furnace, these in turn being coupled main, through which the gases are conveyed to the scrubbing ckets and cleaning doors are provided in the pipe encircling , to collect and remove any sublimed products that have ited therein. The gases are withdrawn by an exhaustor. from the scrubbers is distilled to remove ammonia and the ides obtained by evaporation in a partial vacuum. There gures.

nts in or Relating to the Filtration of Sewage and the like, ic, 61, High-street, Hawick, N.B. Eng. Pat. 18,974. Aug. 17, 1897.
ing and emptying of alternate tanks is effected automatically, flowing to the tanks providing the necessary power. Each ded into two compartments by a division wall, on which a ugh, mounted on pivots, is placed. A float is attached to the trough. The sewage entering tilts the trough to one scharges into one compartment of the tank till full, when es, engages with the end of the trough, and tilts it on to the de. At the same time the exit valve at the bottom of the ned. The sewage filters through the filtering medium, and, air as it descends, aerates the filter as it becomes empty. In me, the second or opposite compartment has filled. The and the process repeats itself in the first compartment. lves are automatically opened and closed by the rocking There are five figures illustrating the arrangement.

of Chloride of Zinc or of Zinc and Chlorine. Dr. C. Hoepf-Helgolander-Ufer, Berlin. Eng. Pat. 24,573. Nov. 3, 1896.

ment is practically a supplement to previous specifications h the same subject, and has reference to certain detailed ns. The ore is roasted, and the sulphur dioxide given off into vitriol. This weak vitriol is used to generate hydro- gas by acting on cheap chlorides, such as salt. The hydro- gas is led into stirring pans, charged with weak zinc olution and the roasted ore. The usual modifications for ric chloride, etc., by previous treatment, is described, with at advantages. The solution finally obtained by the above is put through various operations to separate the other olution and the resulting zinc chloride liquor electrolysed.

nts in the Manufacture of Caustic Soda or Caustic Potash arbonate of Soda or Carbonate of Potash. P. J. Worsley, Lodge, Clifton, and The United Alkali Co., Ltd., G11, Exchange s, Liverpool. Eng. Pat. 591. Jan. 8th, 1897.

oewig process it is necessary to lift the materials out of the

atmosphere of carbonic acid gas which is generated. Contact with the carbon dioxide is therefore avoided by the aid of a Mactear carbonating furnace, thus saving (as far as possible) bringing the material into contact with the fuel gases, and avoiding the use of steam or water gas.

An Improved Process of Soldering Aluminium. F. George, 46, Rue de Molembeck, Lükens-lex-Bruzelles, Belgium. Eng. Pat. 18,731. Aug. 12th, 1897.

A bath composed of one part sea salt to two parts of essence of turpentine is prepared. The parts to be soldered are heated to a dull red and plunged into the bath. The parts are then covered with powdered borax, and aluminium in a state of fusion interposed, when a perfect joint will be formed.

LORD REAY ON TECHNICAL EDUCATION.

LORD REAY presided at the annual meeting of the Scottish Association for the Promotion of Technical and Secondary Education, which was held at Edinburgh, recently, and delivered an address on the urgent necessity of paying more attention in this country to organising and systematising technical education. While the Victorian era had been rich in men of the highest scientific eminence, other nations not possessing men of equal eminence had enriched themselves by the teaching of the men who filled such glorious pages in our history. In chemistry, in physics, in electricity, in geology, in astronomy, the most illustrious names of Scotsmen and Englishmen could be mentioned; but when it came to the adaptation of their teaching in the school, in the workshop, on large landed estates, they had to go to Germany, to the United States, to Switzerland, and to Belgium. The reason was, as Professor Mahaffy had recently declared, that the "social estimate" which we had adopted of the higher education had forced our young merchants, young manufacturers, and young landowners into the channels, not of a *bona-fide* arts course, but of a sham classical education. Our system of education ought to be worked on entirely different lines.

NO SPASMODIC EFFORTS

here and there to form science classes, but technical schools which led to technical colleges, on a carefully graded system, were needed. While the greatest activity prevailed in the technical schools and engineering works of the Continent and of America, we were engaged in the most calamitous and suicidal industrial war of modern days. We certainly had the brains and the capital, and what we wanted was organisation. The Education Department would have to determine clearly the lines of demarcation of the various forms of education which it would support. In the United States, Germany, France, and Switzerland, public money was ungrudgingly given to technical schools, and there was no reason why in this country there should be so much hesitation. The cause of the success and progress of Continental industry was due to the keen sense of competition and to the widespread conviction that all production must be placed on a scientific basis. Science there was not considered as a luxury, but as a powerful agent of economic production. The sooner we realised that our very existence as an industrial nation was threatened the better. In the navy we had the best proof of what organisation and technical skill could achieve, and if the Admiralty had succeeded in the creation of the best navy the world had ever seen, there was no reason why similar methods should not restore to our industry and agriculture similar results. Lord Reay was unanimously re-elected president of the Association.

MESSRS. WILLCOX & Co., LD.—At the Smithfield Show this firm had an interesting exhibit in the gallery. Amongst the engineer's necessities were engine packings of all descriptions, such as the Willcox self-lubricating soapstone, patent cork core, india-rubber with core, asbestos, square hemp greased, hemp and flax gaskin, etc.; asbestos millboard, sheet, yarn, and hudhole rings; india-rubber valves, sheet, washers, corrugated brass rings for steam joints, gauge glass rings, tube brushes, cotton waste, sponge cloths, boiler covering cement, felt, block and liquid composition, soap powder, soft soap, wheel grease, engine and boiler fittings, including patent traction engine gauges, Bourdon and Schaeffer gauges, asbestos packed gland and plug water gauges, test cocks, Ottewell patent sight-feed lubricators (the only sight-feed lubricator that will work on road engines), tallow and grease cups, oil syphons, pet cocks, steam cocks, stop valves, safety valves, needle lubricators and gauge glasses with patent safety rings for preventing the india-rubber washer blocking the gauge glass. Since last year we find that this firm have made many improvements in the patterns of their Patent Semi-rotary Pumps. For agricultural water carts and other purposes there is an increasing demand. They have also introduced a special pattern of this pump with quadruple valves for high lifts and deliveries.

Reports of Companies.

PERUVIAN CORPORATION, LTD. GUANO TRADE.

THE report of the board of directors of the Peruvian Corporation, Ltd., for the financial year ended June 30 last, states that the accounts show a profit for the year, after deducting the reduced debenture interest and charges, amounting to £13,150., and a balance at the credit of net revenue account of £44,723. The gross receipts from the railways and lake and river navigation during the past year show an increase of \$202,719. as compared with the preceding financial year, and the additional working expenses amounted to \$338,380., leaving a net decrease of \$135,661. This large increase in the working expenses is attributable to renewals of permanent way and rolling-stock, expenditure on the Central Railway in consequence of landslips, owing to exceptionally heavy rains, and increased cost of fuel and stores, and to some extent the higher rate of wages. It is stated that supplies of oil fuel will now be obtainable, in which event a considerable saving in the cost of locomotive power may be expected.

The net income from guano during the past financial year amounted to £57,195., including the sum of £25,000. paid by the Anglo-Continental Guano Works, under agreement, on the termination of their contract. Considerable difficulty is at present experienced in the sale of guano at remunerative prices, by reason of the fall in the values of manures generally within the last two years, most of the principal raw materials for manures having during the present year touched the lowest point on record. Further, the Anglo-Continental Guano Works are still in course of disposing of the stocks of guano purchased by them from the corporation, a fact which naturally tends to keep down the prices of this particular manure. It is hoped, however, that the recent improvement in the price of corn crops will increase the demand for manures, and that higher prices may shortly rule for the guano at the disposal of the corporation.

CAPE COPPER CO., LTD.

The report for the year ended August 31 states that the profit and loss account shows a credit balance of £292,608., including £77,370. brought forward. This has been dealt with as follows:—£3,577. has been paid in income-tax, and £94,875. in dividends; £5,000. has been transferred to reserve fund; £10,000. to the landed estates and buildings sinking fund; £5,000. to the railway and jetty sinking fund; and £26,113. to the Tilt Cove suspense account. This leaves a balance of £148,044. to be carried forward, out of which a final dividend of 6s. 6d. per share has been declared, payable on January 1, 1898. Only a portion of the increase of profit compared with the previous year is due to the better prices of copper, the remainder of the improved results being due to the economies which have been effected, and to the better work done in the various departments of the company's business, partly brought about by the improved appliances which have been adopted.

CASSELL GOLD EXTRACTING CO., LTD.

The directors, in their report upon the operations of the company during the year ended September 30, state that from the profit and loss account it will be seen that the result of the year's trading has been a profit of £5,256. Owing to the considerable depreciation in value of the shares held by this company in other companies, and which is not fully provided for in the suspense shares account, this profit cannot be dealt with meantime as available for division. For some time past the directors have had under their earnest consideration the question of the company's capital, which, owing to the adverse decision in Africa last year and to other circumstances, is not now adequately represented by tangible assets. After mature deliberation, and with the approval of the company's law agents and auditors a scheme has been devised for the reduction of the capital to an amount more in accordance with the changed condition of things, and upon which it may be confidently expected a fair dividend may in future be paid. The scheme referred to provides that the present issued capital of £235,000. consisting of 235,000 shares of £1. each, be reduced to a like number of shares of 5s. each, fully paid; so that the issued capital would then stand at £58,750. The scheme further provides that the 5s. per share still uncalled on 30,000 shares, and amounting to £7,500., be called up, and that the shares of other companies presently held by this company be distributed amongst its shareholders.

FIRE AT A CURRIERS.—A destructive fire broke out last week in the large four-storey factory of Dalrymple and Co., curriers and leather dressers, Waring-street, Leicester. The flames were discovered shortly before seven o'clock, and the fire brigade was speedily on the scene, but by nine o'clock the premises were gutted. The firemen confined their exertions mainly to saving the cottage property adjoining. The damage is estimated at £15,000.

SOCIETY OF CHEMICAL INDUSTRY.

MANCHESTER SECTION.

THE second sessional meeting was held last week at the Club, Mr. George E. Davis, chairman of the section, presided. In the first half hour devoted to such matters, Mr. Carter Bell (th sec.) opened a discussion on the

ABSORBED OXYGEN

test for effluents from sewage, &c., works. He said they all knew Mersey and Irwell Joint Committee laid great stress on the manganate test for absorbed oxygen. For a long time he has been testing the Salford effluent side by side with the Joint Committee and a long range of experiments had shown that the results obtained by the Committee were always 0.5 to 1.0 grain per gallon higher than his own. A large number of tests were cited, the following are typical:—

M. and I. test 4 hours.

Bell's test 4 hours.

3.9 grains per gallon.

2.3 grains per gallon.

2.3 " " "

1.8 " " "

4.4 " " "

3.4 " " "

In order to try to get to the bottom of these discrepancies the Salford Rivers Committee had thought it would be as well to approach the Joint Committee on the matter, but before doing so samples were sent to three different chemists in Manchester, and was glad to say that each of them confirmed his results, which proved that they must work on pretty much the same lines as himself seemed to point to a different method of procedure on the part of the Joint Committee. At his request the chairman of the River Conservancy Committee made inquiries as to the Joint Committee's method of working, as he was inclined to think that they might be employing different temperature from that used by him. It was with difficulty that this information was obtained, and he considered it most discourteous on the part of a public body to make any difficulty on such a point, as there could be no need of secrecy as to method employed for analysis. On appeal to the chairman of the Joint Committee (Sir John Hibbert) he at once said that the process should be given then appeared that the difference between the methods of working was simply a question of dilution. He used 20 c.c. diluted to 70 and the Committee took 70 c.c. direct. He did not for one minute mean to say that the Joint Committee's method of working was wrong, because he had made a considerable number of estimations by the two methods and found that while in some cases there was agreement, in others there was a wide divergence. He described the two methods, and in the members to say which was the better way.

The Chairman opened the discussion with a few remarks on the variability of the test. Dr. Grossmann took complete exception to the test, and wondered why it was used at all. It reminded him of a soldier who, when asked why sulphur was put in gunpowder, said "make it stink." He could prepare good waters that would be destroyed by the oxygen test and bad ones that would be passed.

Mr. H. Grimshaw said he took an even greater interest in this now, as, either fortunately or unfortunately, he was a member of the Rivers Committee of the Manchester Corporation. He considered Bell's remarks were very pertinent, and that it was absurd and unreasonable that the Joint Committee should show such reserve as to have done either with regard to their method of testing or their standards. [Vide Correspondence Ed. C. 7.]

Mr. Smith, Dr. Gerland and Dr. Kleemann also spoke.

It was agreed that Mr. Bell should submit a further communication on the subject to a future meeting in order that the chemist to the Committee might be present, and the subject thoroughly discussed.

Dr. Grossmann, in a paper on "Indigo testing with permanganate," criticised the method suggested by Mr. Christopher Rawson, and figures in confirmation of his former advocacy of the permanganate in conjunction with the dyeing test described by him in a paper before the Society of Dyers and Colourists at Bradford.

In the discussion Dr. Green gave a *résumé* of Wroblinski's views on indigo testing that recently appeared in the *Moniteur Scientifique*.

Dr. F. H. Bowman contributed a paper on "Steam, gas, and electrical energy as applied to chemical works." Describing the results of his personal experience, he said that the steam engine was a wasteful machine. Even with the best of boilers and engines the efficiency of 85 tons of coal out of 100 was wasted; yet it had so many advantages that except in particular conditions he feared that for a very long time they would have to rely upon it in chemical works.

The gas engine was too complicated and intricate for the rough work of a chemical works, but where power was required for the production of an electric current and there was a supply of producer or water available, there was no doubt the gas engine was a most efficient and economical method of obtaining power. Owing to its great cost other objections he thought that in ordinary chemical works, electricity would for some time to come be confined more or less to light for which purpose it was admirably adapted. For power it would

1/4 d. per Board of Trade unit to compete with steam, and 1/8 d. per unit with gas. There were about 40 members present, among whom several found the papers more satisfactory than the tea that preceded them. The usual votes of thanks concluded the meeting.

FINISHING CHAMBER SPACE IN VITRIOL MANUFACTURE.

By E. HARTMANN.

ALLOWING up a suggestion, for which I am indebted to Lunge's treatise on sulphuric acid manufacture, I introduced a few years improvement in sulphuric acid plant, which, on account of its simplicity and the good results obtained should be of general interest. I mention (German edition, page 821) that Burgomeister proposed a number of vertical lead tubes, 40 or 50 c.m. wide, should be fixed in the first chamber between the floor and the top for the purpose of cooling the gases, of providing additional surface for condensation, and for the gases to impinge upon. The idea was dealt with theoretically by Lunge and Sorel; but up to 1893 it had not been practically tested, and it remained questionable whether the necessary chamber floor could be made and kept tight. During the three years I have been successful in carrying out the idea in a number of sulphuric acid works, and have entirely overcome the joint difficulty by the expedient of hanging the tubes to a frame, after drawing of the curtains of the chambers, thus avoiding the necessity of any joint in the floor at all.

As is well known, in most sulphuric acid works the chamber sides are connected with the floor, but are hung, by means of straps, to the frames of the chambers, so as to dip beneath the surface of the acid contained in the so-called chamber pans or saucers, comprised of the bottoms of the chambers and the upstands, the acid itself forming a seal, which prevents the escape of the gases. My tubes are connected in a similar way. Instead, however, of using hollow cylindrical quadrilateral shafts of 1.5 by 1.9 metre inside transverse section, I use chamber shafts, as I call them, are hung by means of lead straps to a metal framework of wood from floor to ceiling, and are independently provided with an upstand exactly as in the case of the sides of the chambers. The shafts being open at the top and at the bottom, their inner surfaces are freely exposed to the air, a constant current of air passing through exercises a beneficial cooling influence, condenses steam to water or dilute acid, which is required for the decomposition of the nitrosulphuric acid. In addition to this, the gases, through the interaction of the various chemical changes, become intimately and thoroughly mixed, and at the same time an increased condensation takes place. My reason for departing from Burgomeister's original plan, by replacing the tubes with quadrilateral shafts, is that in my opinion the latter presents a better surface for the gases to impinge upon, the former allowing the gases to glide past easily. In fixing the dimensions of the shafts I have been influenced by the desire on the one hand to obtain more surface, and on the other to facilitate condensation. I do not limit the shafts to the first chamber, but place them in all—three in the first and one in each of the others—and I hang them in such positions as I have found to be the most suitable for the purpose. I also further assist the mixing of the gases by the well-known plan of interposing towers—similar to Glover towers, but of considerably smaller dimensions—between the different chambers of a plant. As already mentioned, I have several years' experience of the value of this system, and have obtained very good results from it, not only with new plant, but also with reconstructed old plant. One example, for instance, informs me that they have increased their production of this means about 20 per cent. with the same chamber space. It is no difficulty in charging the equivalent of 1 kilo. of sulphur per 9—1.0 cubic metre chamber space per 24 hours. Compared with other constructions of a similar nature, the one I have described has the advantage of being extremely moderate in cost.

It is not unlikely that ultimately experiments in this direction will lead to the entire replacement of the costly lead chambers by the iron towers; and should this be accomplished it will then be possible to meet the want, which is so often felt owing to local or other circumstances, of a sulphuric acid plant designed for considerably increased production. As yet, experiments in this direction have not, so far as I know, led to very encouraging results, but there is a plant at present in course of erection which will combine chambers and larger towers.—*Chem. Zeit.*

ACCIDENT AT A BLEACHWORKS.—A shocking scalding accident occurred at Rothwell Bleachworks, Bury, last week. A youth named James Moores fell into a tank of boiling bleaching liquid, and was severely scalded about the body. He was conveyed in a horse-drawn ambulance to the Bury Infirmary, where he lies in a precarious condition. Owing to the dense fog the ambulance containing Moores and another man collided, the shaft of the ambulance being broken.

Selected Correspondence.

THE MERSEY AND IRWELL JOINT COMMITTEE.

(To the Editor of the "Manchester Guardian.")

SIR,—As reported in the *Guardian* for December 3, I expressed the opinion at the meeting of the Society of Chemical Industry "that it was absurd and unreasonable that the Joint Committee should show such reserve as they had done, either with regard to their method or their standard." The circumstances of the case, as stated by Mr. Bell, entirely warranted my remark; but, on looking up the matter myself, I find that such reserve with regard to communicating their method to the Salford Corporation and other authorities does not appear to have been maintained. In the shorthand report of the action of the Joint Committee against the Salford Corporation in 1895, at which Mr. Bell was present, Mr. Bidder cross-examined Mr. Scudder, Chemist to the Joint Committee, as follows:—

"908. Question: Then I do not think I will repeat the examination with you. I want one other matter, which I ought to have put to you in cross-examination before, and it was on my conscience that I had not done so. It is simply this. With regard to the figures in your analysis, Table A, of the permanganate test, I am going to put in results from the same samples that differ from yours. Ours are in most cases some 15 or 16 per cent. We get a result some 15 or 20 per cent. less than you, and it is only fair that I should put that matter in cross-examination to you, to see if you can explain it.

"Answer: I used the process as described by Dr. Tidy and approved by the Society of Public Analysts. The description of the process used is found in Sutton's 'Volumetric Analysis.'"

On referring to "Sutton," I find the process described on pages 430 and 443 of the sixth edition. The charge of secrecy, therefore, with regard to this method of analysis can scarcely be maintained. Since the meeting, Mr. Scudder has informed me that the laboratory of the Joint Committee is, and has been, freely open to any chemist connected with any authority or works in the watershed, and that a number of chemists have from time to time availed themselves of the facilities thus offered.

I feel that in justice I must at once give publicity to this view of the matter, which I hope you will be able to insert in your next issue.—I am, &c.,

HARRY GRIMSHAW.

Clayton, December 4, 1897.

NITRATE STATISTICS.

THE November shipments to Europe are cabled as 114,000 tons against 99,000 last year. As 90,000 tons, exclusive of steamers, were actually loading in Chili on the 1st ult., it is evident that a number of vessels have been kept back for "window dressing" as the sailings this week will show. With the same object the "deliveries" have been raised 30 per cent. over last year's, although arrivals in European ports, always recognised as the criterion in the non-agricultural season, were fully 20 per cent. less than in November, 1896. Thanks to these innocent dust-raising devices the visible supply at December 1st is kept down to 575,000 tons, compared with 617,000 a year ago, and 605,000 in 1895 (official figures). The apparent shortage is already discounted by the extra steam tonnage chartered for December-January-February loading. High freights have so far kept the cargo market nominally firm, pending the development of the Kilkeny-cat policy adopted by the nitrate producers, but the time is at hand when buyers will fight shy of paying 4s. 9d. per quintal f.o.b. The nitrate railways can at last boast of a traffic increase (*gross*), which although substantial, does not pan out in proportion to the largely increased quantity of nitrate carried by the rival lines.

Messrs. G. Dobell and Co., of Liverpool, give the following figures of stocks and consumption during the past five years in tons:—

	1897.	1896.	1895.	1894.	1893.
Stocks and Consumption during past five years.					
Stock on U.K. & Continent Nov. 30	213'800	304'500	143'700	92'200	90'400
Afloat for " " "	349'600	337'600	446'700	363'600	350'200
Visible Supply	563'400	641'500	590'400	455'800	440'600
Consumption Jan. 1st to Nov. 30th	916'000	874'170	881'130	856'830	742'670

The Permanent Nitrate Committee's public statistical circular for December states:—"Total exports to Europe, November, 2,507,000 qtls.; loading for Europe, December 1st, 1,536,000 qtls.; imports, Europe, November, 70,680 tons; deliveries, Europe, November, 39,720 tons; visible supply, Europe, December 1st, stocks and afloat, 569,340 tons."

MORE LOW FLASH CHICANERY.

First Bluff then Threats.

BY suddenly championing the dangerous low flash oil Dr. Dupré has got out of his depth. He has pointed to Germany as an instance of low flash oil and no explosions. As he has pointed to Germany, so do we, how is this for example?

BERLIN, Dec. 3rd.—The Socialist Deputies in the Diet of the Grand Duchy of Baden have decided to interpellate the Government as to what measures they propose to take to prevent the American Oil Company of Mannheim and Bremen from obtaining a monopoly injurious to the public interests in the supply of petroleum in South Germany.

There is apparently to be a concerted move against this threatened monopoly (the italics are ours —Ed. C.T.J.), for the National Liberal Party in the Reichstag have given notice of a similar interpellation to the Imperial Government, in which the Standard Oil Company is mentioned by name as the would-be monopolist.—*Central News*.

Commenting on this the *Star* says, "while the overwhelming weight of scientific authority demands the raising of the flash-point to 105 deg. F. and the exclusion of 'the deadly 73 deg.,' the most influential of the permanent officials upon whom it must fall to advise a Minister are either actively hostile or else are exhibiting an ostentatious indifference which is open to the most serious misconstruction. While the Government's own administrative department insist on the use of high-flash oils therein, men of the scientific and official eminence of Sir Fredrick Abel, Mr. Boverton Redwood, and Colonel Majendie are refusing the same protection to the lives and property of the poor. To that list we must now add Dr. Dupré, who is the Chemical adviser of the Home Office.

This gentleman took part in a debate at Sutton the other week after a lecture by Mr. E. Price Edwards, one of the Principals of Trinity House, who advocated the raising of the flash-point. The *Sutton and Epsom Advertiser* of November 13th says:—

Dr. Dupré expressed an opinion that it was not the low flashing-point that was dangerous. It was the bad lamps, and the ignorance of the people in using the oil. In Germany, where lower flash oils were used, there never were explosions from the lamps, and besides, there the husbands did not throw the lamps at their wives on Saturday nights. If higher flashing-point oils were insisted upon it would mean such an additional expense that it would place the homes of the poor in darkness. *If people thought they would get legislation on the subject to raise the flash-point they would be very much mistaken* [the italics are again ours, Editor C.T.J.] for legislation would not so upset the trade. What was wanted was education and better lamps.

We are sorry to say that Dr. Dupré's main point is merely a juggle with the word "explosions," which is only rendered possible for him and his like by the circumstance that in German statistics, no distinction is made between oil explosions and the escape and ignition of oil on an upset lamp. But we have shown on the testimony of Professor Wm. Ramsay and Lord Kelvin, that the mischief of low flash oil is not limited to "explosions," but immensely increases the danger of lamp upsets. What, then, are the figures of lamp accidents (including explosions and ignitions) in Germany? Professor Lobry de Bruyn, the Dutch chemist, has shown in the *Chemiker Zeitung*, that in Berlin, Hamburg, Antwerp, Copenhagen, Bremen, Amsterdam, in fact all over the Continent where this low-flash oil has been admitted, the ratio of petroleum fires to the total fires ranges from 10 to 37 per cent. The International Congress of Fire at Amsterdam, in September, 1896, by a tremendous majority, demanded the raising of the flash-point to 104° (Abel). The chief of the Bremen Fire Brigade declared at the congress, that when a lamp burning high-flash oil was upset, no fire resulted, while with low flash oil, it took fire readily. That is a German testimony which we present to Dr. Dupré.

When his facts are not facts it is not surprising that the conclusions he bases on them are equally fallacious. He says it is the bad lamps, not the bad oil. In January, 1892, Mr. W. Fox, chemist of the Petroleum Association, reported as a result of a series of experiments:—High-class oils are in every way safer than low-class oils, no matter what kind of lamp they are burned in.

This was endorsed in a report of the Petroleum Association in June, 1892, which declared that Mr. Fox's experiments had disproved the statement that there was "no greater safety with high-test oils than with the common oils used by the poor." That report was signed by Mr. J. D. Jamieson and Mr. Thomas Abbott Smith, two representatives of the Anglo-American Oil Company, which to-day is selling the deadly "Royal Daylight" or "Tea Rose" with a flash-point of nearly 73° F.

We need not discuss Dr. Dupré's cost bogey, for that was answered at the meeting. The competition of Russian petroleum, of gas and of electricity, would prevent the Standard Oil Trust from seriously raising the price—and they know it.

It is, however, extraordinary that a public official like Dr. Dupré should, before the Select Committee have considered their report, be so freely prophesying that the flash-point will not be raised. When we

remember that the trade he doesn't want to "upset" is the trade of the Yankee millionaire Rockefeller, we think it time to direct the attention of the Press generally to this singular phenomenon.

It indicates in our opinion that the English official apologists of the Standard Oil Trust mean to "take it fighting." So be it. We promise them that they will be very tired of the name of Rockefeller before this campaign is over, and we look confidently to the Press, without distinction of party, to assist in making their real position clear to them.—*Star*.

CHEMICAL MANUFACTURERS AND "SPECIAL RULES."

CONCLUSION OF THE POMONA CASE.

THE adjourned summons, taken out at the instance of Mr. J. H. Rogers, Her Majesty's Inspector of Factories for Manchester, against the Pomona Chemical Company, of Cornbrook, Old Trafford, Manchester, for committing a breach of the Factory and Workshops Act on October 11th was again down for hearing at the County Police Court on Tuesday, before the Stipendiary (Mr. Yates, Q.C.). When the case was last before the court (vide C.T.J. 549, p. 340), it was proved that there were several vats in the works of the defendant company which contained a dangerous liquid which were not fenced, and that a workman had fallen into one of the vats and died. The summons was taken out under the Act for a breach of special rules in connection with chemical works, and on the last occasion Mr. Jordan, solicitor, who appeared for the company, denied that they had received a copy of the rules, and the case was adjourned in order to allow evidence to be called to prove the service. On Tuesday Mr. Rogers called John Mayall, principal clerk at the Leeds Divisional Office of the Home Office, who stated that on the 9th February, 1896, he received a requisition from Mr. Rogers to forward a copy of the special rules to the Pomona Chemical Company. He put a copy of the rules in an envelope and posted it himself to the company about two days afterwards. The following day he received a letter from the company stating they had received the communication, and it should have attention.

Mr. Jordan said that the secretary and manager of the company would say that they had no knowledge of the receipt of the rules, but if the bench thought the service had been proved he would raise another point. Section 5 of the Act of 1878 stated that when the machinery was not being used for manufacturing purposes it need not be fenced. The vats in question at the time of the accident were not in full working order. There were about eighteen inches of liquid in, but they were only on trial.

The Stipendiary remarked that unless it was being used for the purpose of manufacturing he did not see why they should have had any liquid in.

Mr. Jordan continued that nobody more deeply regretted the accident than the company. It was the first accident that had happened at their works, and they had gone to the expense of giving the deceased a respectable burial. The man had no relations living who were in a position to make a claim on the company. If the bench were against him on both the points he had raised, he would ask them to inflict only a nominal penalty. Everything was now fenced, and they looked as though they had been packed to be sent to Russia. They could hardly see anything.

The Stipendiary intimated that the bench were of opinion that the rules had been served, and on the point of law he thought that if the machinery was being worked for testing or otherwise it ought to be fenced.

Mr. Jordan said that at the time of the accident the man was lighting his pipe, and the company thought that if he had not been doing that he would have been alive to-day.

The Stipendiary said it had been proved that a copy of the special rules had been posted, and the Act of Parliament made that evidence of service, and he had come to the conclusion that the letter received the next day was an acknowledgment of their receipt. The bench thought it would be better to leave the question of compensation to the ordinary course of law. Human life should be taken as much care of as possible, and the least penalty they could impose was £5 and costs.

THE MANCHESTER SEWAGE SCHEME.—At the meeting of the Rivers Committee of the Manchester Corporation, held on Monday, a sub-committee was appointed to consider and report upon plans for the treatment of the sewage of the city. Their task is likely to prove burdensome. The members of the general committee are already being deluged with plans and schemes of interested parties. It is intended to take the advice of experts and to report at an early date. The chairman (Sir Bosdin Leech) is to be commended for the prompt action he has taken in the matter.

MERSEY AND IRWELL JOINT COMMITTEE.

THE monthly meeting of this Committee was held on Monday at the offices, Mosley-street, Manchester. On the motion of Mr. Alderman M'Dougall, Sir John T. Hibbert was unanimously re-elected chairman of the Board. In taking the chair, Sir John Hibbert said that in a certain sense his position was a pleasant one, but so far as the work involved was concerned he was bound to recognise the fact that he and the other members of the Board had a difficult work in front of them. It was as a matter of duty that he accepted the chairmanship of the Board. On the task before them he hoped they would bring to bear business views and habits. They would show, he hoped, a due consideration for those with whom they had to deal, and whose position was sometimes a very awkward one. The question, so far as it concerned Manchester and Salford, was a very difficult one. It would demand their most careful consideration, but he had no doubt that eventually they would pull the matter through. Dealing equally with all, both authorities and manufacturers, and showing consideration where it was called for, they would overcome all their difficulties. A great improvement had taken place since the work of the Committee was begun, and before many years had passed he was convinced they would be able to point to two streams much purer than they were, and also to much better water in the Ship Canal. On the motion of Mr. T. W. Killick, Mr. Alderman Noton (Oldham) was elected vice-chairman.

On the recommendation of the Consulting Sub-committee, it was decided to grant a further period of three months to the Royton Council in which to carry out their works. Mr. T. W. Killick remarked that Royton was one of the cases where artificial filtration had proved successful, but where the Local Government Board stood in the way. A deputation from the Marple District Council was received, and they reported that, in regard to a small pollution in one part of the river, negotiations were in progress for a joint scheme with a neighbouring district. The Council had no intention of shirking the matter. On the motion of Mr. Killick, it was resolved to take proceedings against both Marple and Hayfield, the Clerk to wait two months to see whether or not terms for a joint scheme could be agreed upon.

In regard to the Manchester and Salford Corporations, the Sub-committee presented a series of analyses and diagrams, prepared by Mr. Frank Scudder, of sewage effluent from the Manchester and Salford works. The Committee reported:—"Sir Henry Roscoe has laid before your Sub-committee the analyses of 33 samples of effluents from the sewage works of local authorities. Of these he reports that 13 are good, five fair, seven unsatisfactory, and eight bad samples. Your Sub-committee recommend that the Clerk be instructed to write to those authorities whose effluents are classified as unsatisfactory, calling their attention to the matter. Of the bad samples, it will be seen that one was obtained at the Radcliffe Sewage Works, where the local authority are carrying out further works. A bad sample was also obtained from the Bolton Corporation Sewage Works, where good progress is being made in laying out land for filtration. The other bad samples were obtained from the sewage works of the Corporations of Manchester and Salford, and have already been dealt with in detail in this report. Mr. Scudder has laid before your Sub-committee the chemical results of the examination of 48 samples of water taken from the Ship Canal at six different points on eight occasions, during the months of October and November, 1897, in comparison with the chemical analyses of the sewage effluents discharged into the canal from the Manchester Corporation Sewage Works and the Salford Corporation Sewage Works. The results have been set forth in diagrams prepared from the tables of analyses, and your Sub-committee, having considered the matter, recommend that the same be received, and printed and circulated with the proceedings."

Mr. Killick expressed a hope that these detailed analyses would receive the careful attention of the responsible committees in Manchester and Salford.

Mr. Scudder said the chemical results of the analyses were set forth fully in Table A and Diagram 1. The average results of the canal waters were compared with the effluent from the Manchester Sewage Works and the Salford Sewage Works in Table D and Diagram 2. From these results it was shown that the sewage effluent as discharged into the Ship Canal from Manchester and Salford does pollute the waters of the canal. Further, the average impurity of the Ship Canal samples at each point tested was less than the minimum impurity found either in the sewage effluent from Manchester or the sewage effluent from Salford. For instance, the free ammonia, the albuminoid ammonia, and the oxygen absorbed found in the average sample of the Ship Canal water was invariably below the minimum amount of these impurities found in the Manchester effluent and the Salford effluent, and the effect of the discharge of these sewage effluents into the canal was illustrated clearly and distinctly in these tables of analyses, and especially so in the Diagram No. 2.

Mr. Alderman Southern said he was bound to say that these diagrams and analyses appeared to him to be extremely instructive. It had frequently been said that the effluent was no worse than the water into which it passed. The diagrams shown effectually dispelled any such illusion. It was perfectly clear that the effluent was infinitely worse than the canal into which it flowed. He asked Mr. Scudder to explain how it was that sample No. 5, taken 50 yards above Barton Locks, was so much superior either to sample No. 4, which was after receiving the Salford sewage discharge, or No. 6, which was after receiving the Manchester sewage discharge.

Mr. Scudder said that from the Salford outlet, half a mile below, to the next point where the sample was taken before reaching the Manchester outlet, there was a long reach of the Canal. During that reach there were two processes at work. There was sedimentation, pure and simple, forming mud at the bottom. This putrefies and eventually annihilates the organic matter. The improvement was not due to oxidation but to putrefaction, and this was illustrated by the diagrams. Sedimentation had a most important part to play in the matter, but putrefaction was dissolving and splitting up the organic matter. They would much rather have the canal cleared by oxidation. If they could induce the authorities to put in matter which would have a tendency to oxidise instead of putrefy they would very soon get out of their difficulties about the canal water.

Dr. Hewitt said his opinion had not been altered, that Manchester and Salford had practically no difficulty to meet but one of volume. It was only a question of having a sufficient filtering area.

The Committee then adjourned.

Trade Notes.

DEPRESSION IN THE CHEMICAL TRADE.—REDUCED WAGES.—

The men on process work at Messrs. Brunner, Mond, and Co.'s works at Sandbach were called together on Tuesday and informed by the manager that, owing to depression in the chemical trade, the Directors could not see their way to continue the works at Sandbach and Middlewich unless the men submitted to a reduction of wages ranging from 7 to 15 per cent. If they submitted to this, the works would be carried on full time. The men held a meeting, and agreed to accept the reduction rather than be thrown out altogether. A large number of fitters, joiners, pansmiths, labourers, etc., employed by the same firm, have received notice that their services will be dispensed with. Following upon the closing of the bleach plant, and the depression which has existed for some time past, the news has created consternation. The whole of the Cheshire chemical trade is suffering, and the outlook for the winter is gloomy.

DEATH BY SUFFOCATION AT COLNE GASWORKS.—A man named John Collins, labourer, Maple-street, Colne, who was employed at the Colne gasworks, was engaged last week in cleaning out a tank when he was overcome by the noxious fumes. He was taken out of the tank by his fellow-workers, and artificial restoration was tried, but without effect.

SOCIETY OF CHEMICAL INDUSTRY.—Nottingham Section.—The second meeting of the session will be held on Wednesday, December 15th, 1897, at the Midland Hotel, Derby, at 7 p.m., when Mr. F. J. R. Carulla will read a paper on "The Manufacture of Sulphur from H_2S ," and a paper will also be read by Messrs. R. M. Caven, B.Sc., F.I.C., and Alfred Hill, on "The Estimation of Cuprous Oxide by means of Standard Potassium Permanganate Solution."

THE INSTITUTION OF MINING AND METALLURGY.—The third ordinary meeting of the seventh session will be held on the evening of Wednesday, December 15th, in the Lecture Theatre of the Geological Museum, Jermyn-street, S.W., at 8 o'clock, when the following papers will be read and discussed:—1. "Mining on the Black Reef, Witwatersrand Goldfields, South Africa," by Mr. W. Fischer Wilkinson, Assoc. Inst. M.M.; 2. "Notes on Smelting at Broken Hill," by Mr. Henry Watson, Assoc. Inst. M.M.; 3. "Notes on the Buying and Sampling of Ores, and the Working of Mines on the Tribute System, in Chili," by Mr. Gerald V. Hopkins, Assoc. Inst. M.M.

THE RUSSIAN OIL TRADE.—The Anglo-Caucasian Oil Company's steamer *Rock-light* is now on passage from Batoum with a full cargo of petroleum. She left Batoum on the 28th ult., and is due at the company's wharf at Eccles on the 16th inst. The works here are now assuming large proportions, the work on the storage tanks and pipe lines being almost completed, storage being provided for about 20,000 tons of petroleum. A large cooerage is now in course of erection, and the business appearance of the works is greatly improved by huge stacks of empty barrels, which are now being stored.

PERSONAL.—Mr. F. S. Kippings, D.Sc., F.R.S., formerly of the Manchester Grammar School, has been appointed Professor of Chemistry at the University College, Nottingham.

NITRATE SHIPMENTS.—The estimated export of nitrate for the twelve months ending next March, based on past shipments and present stocks, amounts to 1,250,000 tons. While the increased production benefits the Government on account of the additional revenue derived from export duties, it makes the prospects of the nitrate industry somewhat gloomy, there being small hope of higher prices in view of production exceeding consumption.

ANOTHER "GASSING" FATALITY.—Two blacksmiths, named Duncan Cameron and Andrew Hunter, were recently found dead at the Eglinton Ironworks, Kilwinning. They had been told off to cut rivets on a gas-tube from the outside, and of their own accord went inside, with the result that they were poisoned by noxious fumes. [The posting of notices concerning the wearing of respirators and oxygen treatment would do much to prevent such mishaps. — *Ed. C. T. J.*]

WATER USED FOR THE RECENT FIRE IN LONDON.—At the last weekly meeting of the directors of the New River Company, it was stated that with the exception of a relatively small quantity taken from a main belonging to the Midland Railway Company, the whole of the water used in the extinction of the great fire in the city of London was supplied from the pipes of the New River Company. The total quantity drawn by the fire brigade was fifteen millions of gallons.

FIRE AT GLASS WORKS.—On Thursday, last week, fire broke out in the oil store and tool house in the yard at the Alloa Glass Works. The building was of one storey, and owing to the inflammable nature of its contents it was quickly gutted out notwithstanding the efforts of the workmen with two large hose. Fortunately they succeeded in preventing the flames from spreading to the adjoining building—a joiner's shop—otherwise much damage would have been done. As it was the damage is estimated at over £100.

RELIANCE LUBRICATING CO.—This firm sends us a smartly compiled catalogue of their engine, dynamo, shafting, and general machinery oils and greases. Their motto seems to be quality and reasonable prices. Two great features are the non-corrosive and non-oxidizing properties of their lubricants. The dangers of the spontaneous combustion of greasy waste are thus reduced to a minimum. They are sending out a neat barrel-shaped inkstand mounted on a square pen-rack. It will also be found useful as a match and pin holder. They are making a specialty of a new high flash lamp oil to replace the dangerous low flash oils. The brand is known as "Queen Empress."

PETROLEUM AT THE MANCHESTER COMMERCIAL SALE ROOMS.—A new departure in the direction of developing the Manchester Ship Canal traffic was inaugurated at the Commercial Produce Salerooms, Deansgate, on Friday last week, when 7,616 gallons of Nobel's refined petroleum oil were offered for sale by auction in ten lots, and quickly disposed of. The terms were net cash on delivery to buyers' premises in Manchester and Salford, this week. The prices ranged from 3d. to 3½d. per gallon, which, under the circumstances, may be considered satisfactory. The first tank steamer with lubricating oil will be here in about ten days, and the sale of her cargo will, no doubt, attract a greater number of buyers.

EXPLOSION IN A CHEMICAL WORKS.—An alarming explosion took place in the chemical works of Messrs. Duncan, Flockhart and Co., South Back Canongate, Edinburgh, last week. The mishap occurred in connection with a still used in the manufacture of chloroform, and as the fumes escaped a number of workmen in the place were more or less affected by them. One man was rendered insensible, but he was rescued with some difficulty and taken to the Royal Infirmary, where he recovered. The damage to property and loss of material will amount to several hundred pounds.

THE SALT TRADE IN NOVEMBER.—The official returns of the salt trade were issued on Saturday last, and show that, while there had been a falling off of 2,208 tons exported from the United Kingdom, there had been an improvement, represented by 2,389 tons, in the coastwise trade. The exports reached 41,657 tons, and the coastwise shipments 23,033. From Liverpool 33,893 tons were exported, as against 35,005 in November, 1896. There was, however, a marked improvement in the Runcorn, Weston, and Ship Canal trades, the exports reaching 3,066 tons, or 1,188 tons in excess of the corresponding period; and the coastwise 1,930 tons, which is an increase of 315 tons. In the case of Liverpool there has been a falling off in the shipments to the United States, only 6,877 tons, as compared with 11,895 tons, being taken. British North America had doubled her demand, and Australasia had fallen from 1,739 tons to 919, and Denmark from 690 to 163 tons. The improvement manifested by Runcorn and the Manchester Ship Canal was due to additional shipments to the United States and Holland. The trade of Middlesbrough and district had diminished 1,058 tons, and Fleetwood had exported 1,629 tons less. During the present year the export and coastwise trade had amounted to 910,554 tons, or a reduction of 14,212 tons.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols are neglected and prices easier, with 90's at 1s. 9d. and 50/90's 1s. 11d. There is little doing in carbolic acids, the quotations for which remain as last week. Naphthas are more or less nominal with a weaker tendency in crude. Pitch is quiet to dullness, at 20s. f.o.b. East Coast, and, considering the size of stocks, its position is rather puzzling. Anthracene quiet. Creosote firm.

Sulphate of ammonia is firmer. Speculators do not appear to have found the market as manageable as they imagined. During the week the inquiry has been brisk, and considerable business has been done. The market closes firm at £8. 17s. 6d. for Beckton; London outside makes, £8. 16s. 3d.; Liverpool, £8. 17s. 6d.; Hull £8. 15s.; and Leith, £8. 15s., all prompt.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade business is fairly active. Bleaching powder is moving freely, both for home trade and export, at £6. f.o.r. makers' works, and £6. 5s. f.o.b. Liverpool, with variations according to market. For 1898 delivery the price is still £5. to £5. 2s. 6d. f.o.r. makers' works. Chlorates are lower. Caustic soda nominally unchanged for spot delivery, and forward business has been done at lower rates. Current quotations, f.o.b. Liverpool, are as follow:—77%, £8. 10s.; 74%, £8. 2s. 6d.; 70%, £7. 5s.; 60%, £6. 5s. per ton, 10-ton lots. Alkali, 58%, unchanged at £3. 17s. 6d., bags, f.o.r. makers' works. Soda crystals and bicarbonate dull. Sulphate of copper fairly steady at £16. to £16. 2s. 6d. f.o.b. prompt; £16. 7s. 6d. Jan.-March delivery. Brown acetate of lime firmer at £5. 15s. c.i.f.; grey, £7. 10s. to £7. 15s. per ton. White powdered arsenic rather quiet at £21. 10s. to £21. 12s. 6d. f.o.r. Garston. Potash, caustic and carbonate, are offering at lower rates. Yellow prussiate of potash firm at 6½d. per lb.; cyanide 98/100% is offering for forward delivery at 1s. 1d. per lb. Sulphocyanides are in poor request, and lower prices are ruling. Nitrate of soda steady at 7s. 6d. to 7s. 9d. per cwt.

REPORT ON MANURE MATERIAL.

A fair business has been passing during the week, and there is a firmer tone in the market for nitrogenous material. Mineral phosphates remain firm at prices last quoted. In the absence of cargoes of River Plate bones offering, no business is reported. Up to £4. 7s. 6d. per ton has been paid for fine East Indian bone meal, and this price is quoted for December-February steamer shipment, but not yet paid. Common grinding bones are inquired for, and would fetch full prices, supplies for some time back having been on a very limited scale. Nitrate of soda is firm at 7s. 6d. per cwt. for good, up to 7s. 7½d. per cwt. for refined.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil keeps quietly steady, with only a moderate demand. Olive is in poor request, but prices are well maintained. Linseed keeps steady at 15s. 9d. to 16s. 6d. for Liverpool makes in export cask. Cottonseed is now firmly held at 14s. 9d. to 15s. 6d. for Liverpool refined. On spot the market is steady with a rising tendency for forward. Spot values are 3½d. to 3¾d. for good seconds Calcutta, and 3¾d. to 3½d. per lb. for first pressure French. Tallow is firm, and in good demand at full rates. Resin remains firm on spot, prices of all grades being maintained, but demand is quiet. Petroleum dull, with American 5½d. to 7d., and Russian refined 4¾d. to 5d. per gallon.

CAKES.—American linseed on the spot again show a slight improvement, and there has been rather more business doing at £6. 18s. 9d. to £7. 2s. 6d., with Liverpool makes still selling nicely at £7. 15s. to £8. 10s. per ton, according to brand. In American decorticated cottonseed there is a moderate business doing, values being still given at £5. 10s. to £6, as in quality, and Liverpool makes have again been in fair request at £6. 5s. to £6. 15s. per ton. A fair demand for Liverpool undecorticated makes at £4. 2s. 6d. to £4. 10s., according to brand, but the market for Egyptian remains quiet at £4. 2s. 6d. per ton for spot parcels.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire—common £10., medium £12., best £15.; Derbyshire—common 40s., medium 50s., best 60s.; Welsh—best 90s., seconds 50s., and common 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead: £16. Red lead unchanged. Venetian red: £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide: £22. 10s. to £25.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The market shows no special animation, though refined cotton oil is a little firmer, probably owing to large supplies being shipped from here to Marseilles, and others are in anticipation. The stocks of seed in Hull, month ending November, were:—Linseed, 17,605 qrs., against October, 14,942 qrs.; rapeseed, 1,601 qrs. against 83 qrs.; cottonseed, 1,180 tons against 1,181 tons. The imports during the month have amounted to: Linseed, 94,104 qrs. against 91,108 qrs. during October; rapeseed, 22,396 qrs. against 11,910 qrs.; cottonseed, 22,359 tons against 17,805 tons. Linseed oil dull: spot sellers at 13s. 10½d. per cwt. naked; forward Dec., sellers, 14s.; Jan.-April, sellers, 14s. 4½d. Boiled and refined, £1. to £1. 10s. per ton extra. Refined cotton oil better, spot naked, buyers at 12s. 6d.; forward Dec.-April, buyers, 12s. 7½d. Filtered oil about £1. per ton extra; crude ditto, spot 11s. 6d. naked; casks £1. and ordinary barrels £1. 10s. per ton extra. Castor oil from 3½d. per lb. Turpentine, 24s. 6d. per cwt. Arachide nut oil, £28. upwards. Oleins from £16. per ton for brown to £20. for white re-distilled. Olive oils, quiet and unchanged. Olive oil soap, £16. per ton. Cod oils, £16. to £18. per ton. Stockholm tar 24s. 6d. per barrel. Danish butter, 116s. to 118s. per cwt.; Dutch, 100s. to 105s.; Canadian, 80s. to 90s. per cwt.

CAKES.—Linseed cakes firm, but quiet, 95% pure, £7. 15s. to £7. 17s. 6d. Oilcakes (linseed), £6. 15s. to £6. 17s. 6d. per ton; Russians, £7. 7s. 6d. to £7. 12s. 6d.; Americans, £7. to £7. 2s. 6d. Cotton cakes steady, but fresh orders not too plentiful; best makes, £4. 1s. 3d. to £4. 2s. 6d.; seconds, 2s. 6d. per ton less. Rape cakes, Black Sea, £4. 10s. per ton. East India, £6. 7s. 6d. per ton.

PAINTS.—Firms continue working short time here in these trades, with little prospect of any change before the New Year. White and red leads continue at advanced rates. Ordinary colours in oil from £9. per ton. Paint remover, 25s. per cwt. Lime blue, 12s. 6d. Ultramarines from 2½d. per lb. Dry mineral colours are unchanged. Black varnish, for ironwork, etc., £5. per ton. Other varnishes quiet.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

The organised attack on the bettering position of sulphate of ammonia has been successful so far, that makers for the time have been obliged to give way. Up to the time of writing, the lowest done for prompt Leith has been £8. 12s. 6d., but there is a feeling that a reaction is in the air and that probably the article will not go much, if any, lower, in the meantime. The market is flustered, however, and does not very well know how it stands. There has been no forward dealing. In the mineral oil department, the most of the lines are unchanged in price, but lubricants form the exception. These have been weakening for some time, makers ascribing the tendency to the long protracted curtailment of consumption arising from the engineering strike and lock-out. Ordinary chemicals are mostly quiet, and the two or three changes that show themselves are all found on the lowering side.

Chief prices current are:—Soda crystals, £2. 10s. to £2. 17s. 6d. nett, Tyne, soda ash, 48/62°, £4. 5s. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £4. 17s. 6d. to £5. 7s. 6d. nett, Glasgow; caustic soda, white, 74° £8. 2s. 6d., 70/72° £7. 5s. od., 60/62° £6. 5s. od., cream 60/62° £6. all nett, Liverpool; bleaching powder, 35/37°, £6. 5s. nett, Tyne; saltcake, 19s.; borax, English, refined, £15., and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4d. nett, for Scotch and English deliveries (for export, 3¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3d. nett, f.o.b. Glasgow); chlorate of potash, 3¼d. less 5%, any port; nitrate of soda, 7s. 6d. to 7s. 9d.; sulphate of ammonia, £8. 12s. 6d. prompt, f.o.b. Leith; sal ammoniac, first and second white, £33. and £31. nett any port; sulphate of copper, £16. 5s. less 5% Liverpool; paraffin scale, hard, 1¼d. to 1½d. per lb., soft, 1½d. per lb.; paraffin wax, 120° semi-refined, 1¼d. to 2d. per lb.; paraffin spirit (naphtha), 7d. per gallon; paraffin oil (burning), No. 1, 5¼d., and crystal, 6d., at Glasgow and other big centres, for Scotch buyers (English sales a shade lower); ditto (lubricating) 86½° £4. 10s. to £5. 5s., 88½° £5. 10s. to £6. and 89/89½° £6. 5s. to £6. 15s. Week's imports of sugar at Greenock were 23,700 bags beet unrefined.

TYNE CHEMICAL REPORT.

TUESDAY.

The chemical trade is quiet, with absolutely no alteration in prices. Soda crystals £2. 12s. 6d. per ton, gross weight, locally. Caustic 76/77° £9. per ton, 70° £7. 10s. per ton. Sulphur £5. per ton, and scarce.

Bleaching powder, softs, £6. 5s. per ton, nett; hards, £6. 10s. per ton, nett; caustic soda, 76/77° £9. and 70° £7. 10s. per ton, nett; recovered sulphur, 2 cwt. bags, £5. per ton, nett; soda ash, 48°, £4. 10s. per ton, nett; do., 50°, £4. 12s. 6d. per ton, nett; do., 52°, £4. 15s. per ton, nett; alkali, 36°, £3. 12s. 6d. per ton, nett; white alkali, 48°, £5. per ton, nett; do., 50°, £5. 5s. per ton, nett; do., 52°, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 4¼d. per lb., less 5%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95° crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham salt is steady at 9s. per ton, f.o.b. Tees.

COALS.—Market is more active, tonnage being plentiful and demand steadier. Bunker and gas coals are firmer in price. Coke rather weaker. Best Northumbrian steam, 8s. 3d. to 8s. 6d. per ton; second qualities, 7s. 3d. to 7s. 6d. per ton; small steam, 3s. 3d. to 3s. 6d. per ton; bunker coals, 7s. 9d. to 8s. 3d. per ton; gas coals 8s. od. to 8s. 6d. per ton; household coals, 10s. to 11s. per ton; coke, 18s. to 20s. per ton.

New Companies.

Matthew's Lancashire, Cheshire & North Wales District White Lead Co., Ltd.—CAPITAL £45,000. in £1. shares. This company has been formed to acquire a licence to use inventions relating to the manufacture of white lead, to adopt certain agreements, and to carry on the business of white lead manufacturers, importers and dealers, smelters, desilverisers, chemists, druggists, drysalts, etc. The subscribers to the memorandum of association are:—J. Gull, 14, Barclay-road, Croydon, clerk; C. V. Bagot, 22, Brechin Place, S.W., solicitor; W. F. Watkins, 30, Park-road, New Wandsworth, clerk; G. E. Gosnell, 159, Barry-road, E., Dulwich, clerk; E. E. Lake, East Heath Lodge, Hampstead, N.W., solicitor; W. H. Gaywood, 4, Elspeth-road, Clapham Common, S.W., clerk; W. J. Tillaney, 108, Denmark-road, Camberwell, S.E., clerk. Registered office, Old Quay, Runcom, Cheshire.

Oriental Salt Co., Ltd.—CAPITAL £50,000. in £10. shares (500 def.). This company has been formed to acquire and carry on the business of salt manufacturers carried on by Stuart, Hill & Co., and Hall, Wilson & Co., at Karassa and Jagannaikpur, in British India, to adopt certain agreements, and to acquire and work certain patents relative to the manufacture of salt. The subscribers to the memorandum of association are:—S. Macleay, Winchester House, E.C., merchant; G. Lyell, Winchester House, E.C., merchant; R. Paul, 23, Gt. Winchester-street, E.C., merchant; A. V. D. Best, 2, Belgrave Place, S.W., merchant; K. Mackenzie, Chobham, Woking, Col. I.S.C.; A. Macnab, 23, Gt. Winchester-street, E.C., merchant; S. Hull, 23, Gt. Winchester-street, E.C., merchant. Registered office, 9, Throgmorton Avenue, E.C.

W H Willcox & Co., Ltd.—CAPITAL £60,000. in £1. shares. This company has been formed to acquire the business carried on as "W. H. Willcox & Co.", to adopt an agreement with W. H. Willcox and W. Cordrey, and to carry on the business of engineers' store keepers, oil refiners and merchants, leather merchants, belting manufacturers, tool makers, etc. The subscribers to the memorandum of association are:—W. H. Willcox, 29, Wickham-road, Breckley, S.E., oil merchant; W. Cordrey, 5, St. Mildred's-road, Lee, Kent, oil merchant; G. A. Miller, 7, St. James's, Hatcham, S.E., traveller; G. H. Turner, 14, Tarbert-road, East Dulwich, manager; A. A. Martin, 76, Florence-road, New Cross, S.E., accountant; W. Pummell, 67, Avondale Square, Old Kent-road, S.E., traveller; E. J. Hardwick, 32, Frovisher-road, Hornsey, N., traveller. Registered office, 33, Southwark-street, S.E.

Gazette Notices.

PARTNERSHIPS DISSOLVED.

- H. THACKER and J. H. TWEEDALE, ink manufacturers, New-street Square, E.C., under the style of Thacker and Tweedale.
C. LOWE and J. GILL, manufacturing chemists, Manchester, under the style of F. C. Calvert and Co.; and at Reddish, near Stockport, under the style of Chas. Lowe and Co.
J. TURNER, E. G. LEE, and H. R. TURNER, chemical manufacturers and tar distillers, Clayton, near Manchester and Great Yarmouth, trading as Turner, Lees and Co.

IMPORTS OF CHEMICAL PRODUCTS

AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.*Week ending November 27th.*

Acetic Acid—		
Holland,	105 pks.	A. & M. Zimmermann
"	30	R. W. Greeff & Co.
Alum—		
Germany,	30 pks.	R. W. Greeff & Co.
Holland,	245	Ohlenschlager Bros.
Ammonium Chloride—		
Holland,	9 cks.	H. Lore 12
Arsenic—		
Melbourne,	109 pks.	Welch, Perrin & Co.
Asbestos—		
Canada,	£187	W. Byford
Italy,	580	
Germany,	30	Craven & Co.
Italy,	175	British Asbestos Co.
"	390	Bender & Martiny
Barium Chloride—		
Germany,	25 cks.	Petri Bros.
Barytes—		
Belgium,	292 brls.	W. Harrison & Co.
Holland,	43 cks.	E. J. Diggins
Germany,	40	J. L. Lyon & Co.
Belgium,	33,720 sks	
"	100 bgs.	W. G. Taylor & Co.
Holland,	44 cks.	W. Harrison & Co.
Bleaching Powder—		
Holland,	36 cks.	J. M. Steel & Co.
Boric Acid—		
Italy,	12 cks.	J. Sogner
Borax—		
Holland,	8 cks.	Phillipps & Graves
Caoutchouc—		
France,	113 c.	H. Johnson & Sons
Singapore,	95	Huttenbach & Co.
"	50	Gilman Bros. & Co.
Rangoon,	200	L. & I. D. Jt. Co.
Singapore,	25	Elean & Co.
"	60	Prop. Bull Wf.
U. States,	30	"
Carbolic Acid—		
Germany,	55 pks.	J. G. Back
Castor Oil—		
E. Indies,	50 cs.	Perkins & Homer
Italy,	50	H. W. Wright
"	10	A. Laming & Co.
"	10	City Coml. Wf.
"	30	Co. Ld.
"	30	Nicholson's Whys. Ld.
Caustic Potash—		
France,	26 drs.	Petri Bros.
Belgium,	60 c.	A. J. Luke & Co.
France,	80	J. A. Reid
Germany,	240	J. M. Steel & Co.
Chemicals (otherwise undescribed)—		
France,	£58	Mory & Co.
Germany,	130	L. & I. D. Jt. Co.
B. Guiana,	7	
Belgium,	130	John Cockerill Line
Holland,	8	J. M. Steel & Co.
Germany,	360	T. H. Lee
"	23	Phillipps & Graves
"	233	A. & M. Zimmermann
"	24	Burgoyne & Co.
"	35	Petri Bros.
"	31	H. Lambert
Belgium,	80	T. Palmer
Germany,	6	Charles & Fox
Holland,	130	G. Rahn & Co.
Belgium,	45	T. H. Lee
Holland,	5	Lasch & Co.
Cream of Tartar—		
France,	8 cks.	C. Atkins & Nisbet
"	23	W. C. Bacon & Co.
"	10 pks.	B. & F. Wf. Co.
"	5	M. Ashby, Ld.
"	4	Blackmore, Leconte & Co.
"	2	G. S. N. Co.
Dextrine—		
Germany,	50 bgs.	M. D. Co.
"	100	H. Lorenz
Dyestuffs—		
Aniline		
Belgium,	6 pks.	W. Gerson & Co.
Cochineal		
Canaries,	14 bgs.	Swanston & Co.
"	10	Hendrey & Martin

Cutch		
Rangoon,	500 bxs.	W. H. Cole & Co.
"	300	H. Howden & Co.
"	500	Hicks & Ashmore
Extracts		
U. States,	12 brls.	Rosenberg, Loewe & Co.
France,	30 pks.	L. J. Levinstein & Sons
Fustic		
B. W. I.,	29 t.	R. M. S. P. Co.
"	15	A. B. Curtis & Co.
Gambier		
Singapore,	627 bgs	Beresford & Co.
"	148 bls.	J. Greig
Indigo		
E. Indies,	33 chts.	L. & I. D. Jt. Co.
"	26	A. B. Curtis & Co.
"	8	R. Von Glehn & Sons
"	7	Croisdale & Co.
"	8	Parsons & Keith
Myrabolama		
E. Indies,	2,000 pks.	P. & O. Co.
Saffron		
Spain,	2 cs.	L. & I. D. Jt. Co.
Shumac		
Italy,	100 pks.	H. Johnson & Sons
Tanners' Bark		
Adelaide,	8 t.	Goad, Rigg & Co.
Natal,	913	Butcher, Mortimore & Co.
Farina—		
Holland,	250 bgs.	J. Barber & Co.
"	100	J. Knill & Co.
Germany,	200	R. Bennett & Co.
"	50	J. Barber & Co.
Holland,	900	R. Bennett & Co.
Singapore,	392	Leach & Co.
Holland,	200	G. Hornace
Glucose—		
France,	200 pks.	200 c. Trier, Meyer & Co.
"	200	200 Robinson Son & Co.
U. States,	50	305 Lon. & Til. Ltge. Co.
"	190	1,045 Ohlenschlager Bros.
"	50	300 C. Southwell & Co.
"	140	640 L. Norman & Co.
"	50	300 Page, Son & East
"	50	40 H. Johnson & Sons
"	250	250 Trier, Meyer & Co.
"	50	300 E. & T. Pink
"	7,410	5,570 R. G. Hall & Co.
Glue—		
France,	£24	Mory & Co.
Germany,	225	L. & I. D. Jt. Co.
Holland,	110	G. Rahn & Co.
Germany,	50	L. P. D. Co.
France,	1,600	Deering & Robottom
Holland,	36	Prop. Hay's Wf.
U. States,	275	A. G. Robinson & Co.
"	93	Aug. Amer. Oil Co.
France,	20	L. & I. D. Jt. Co.
"	20	Bennett S. S. Co.
Infusorial Earth—		
Germany,	50 t.	A. Haacke & Co.
Lead Acetate—		
Germany,	20 cks.	F. Boehm
"	17	Beresford & Co.
Manganese—		
Germany,	3 t.	H. Johnson & Sons
Manure—		
Holland,	10 t.	T. H. Lee
E. Indies,	25	A. Hunter & Co.
Germany,	60	Union L. Co., Ltd.
Belgium,	50	J. G. Back
Uruguay,	554	Anglo-Contl. Guano
Germany,	25	F. W. Berk & Co. Ltd.
Methyl Alcohol—		
Spain,	4 dms.	Lister & Biggs
Mica—		
U. States,	£170	C. T. Ward
E. Indies,	740	W. M. Smith & Sons
Canada,	23	Knight & Morris
Molasses—		
U. States,	50 pks.	280 c. D. J. Jacobs
Ochre—		
U. States,	120 brls.	Cortine Floor Covering Co.

Holland,	23 pks.	Phillipps & Graves
Oxalic Acid—		
Holland,	10 pks.	R. W. Greeff & Co.
Phosphate—		
Belgium,	11 t.	Sawer, Sons, & Co.
"	11	Wilks, Phillips, & Co.
Phosphate Rock—		
France,	250 t.	T. Farmer & Co.
Pitch—		
Belgium,	25 brls.	H. Hun
N. Russia,	500	Fellows, Morton & Co.
Plumbago—		
Ceylon,	146 cks.	French & Plunke t
"	297	Marshall & French
U. States,	5 pks.	Lanham & Moore
Germany,	20	Beck & Pollitzer
Ceylon,	75 brls.	J. Thredder, Son, & Co.
Potash—		
Germany,	280 c.	J. M. Steel & Co.
"	200	Petri Bros.
"	1,000	Blagden, Waugh, & Co.
Belgium,	40	A. J. Luke & Co.
France,	120	W. E. Cole
Canada,	88	Charles & Fox
Potassium Bicarbonate—		
Holland,	10 cks.	A. & M. Zimaer-mann
Potassium Oxymuriate—		
Sweden,	100 pks.	G. Boor & Co.
Potassium Permanganate—		
Holland,	6 kgs.	R. W. Greeff & Co.
Pyrites—		
Spain,	2,051 t.	C. Tennant, Sons, & Co.
Rosin—		
U. States,	100 brls.	Suter, Hartmann, & Co.
Rosin Oil—		
France,	100 brls.	A. Brown & Co.
"	250	C. Price & Co.
Saltpetre—		
Germany,	30 cks.	J. Hall & Son
"	70	S. E. Railway Co.
E. Indies,	715 bgs.	August, Faber, & Co.
Soda—		
Belgium,	600 c.	H. Wallace & Co.
Sodium Hyposulphite—		
Holland,	150 bgs.	J. Owen
Starch—		
Holland,	40 cs.	G. Rahn & Co.
"	190	F. Claydon & Co.
Belgium,	372	Becker & Wagner
Holland,	20	Hernu, Peron, & Co.
Belgium,	700	E. Olyett & Sons
"	60	Taylor Bros.
"	10	Pronk, Davis, & Co.
Holland,	856 pks.	Little & Johnston
Belgium,	350	E. & T. Pink
"	50	205 cs. T. H. Lee
"	20	140 Leach & Co.
U. States,	2,709 bxs.	Beck & Pollitzer
France,	600 cs.	W. E. Cole
"	580	E. & T. Pink
Belgium,	200	C. Tennant, Sons, & Co.
Stearine—		
Belgium,	63 bgs.	W. H. Mitchell
Tar—		
N. Russia,	8 brls.	Linck, Moeller, & Co.
Belgium,	10	Poth, Hille, & Co.
"	20 bls.	T. H. Lee
Tartaric Acid—		
France,	2 cks.	Bryant & Aitken
Holland,	30	B. & F. Wf. Co.
"	4	F. C. Devon & Co.
Ultramarine—		
Belgium,	20 cks.	J. Harrison
"	20 brls.	Leach & Co.
Holland,	3 cs.	Haefner, Hilpert, & Co.
"	25 cks.	25 Thames S. T. & L. Co., Ltd.
"	4	J. Barber & Co.
"	14 pks.	W. Harrison & Co.
Varnish—		
U. States,	44 pks.	J. R. Francis & Co.
France,	1	Mory & Co.
Belgium,	2	T. H. Lee

Verdigris—		
France,	2 cks.	H. Lorenz
White Lead—		
Belgium,	53 brls.	T. & W. Farmiloe, Ltd.
Holland,	39 cks.	J. R. Francis & Co.
France,	17	J. Watt & Son
"	17	Perkins & Homet
Germany,	18	G. Farmiloe & Sons
"	27	Burrell & Co.
Belgium,	16 brls.	Leach & Co.
"	16	J. W. Cook & Co.
"	35 cks.	J. L. Lyon & Co.
Wood Pulp—		
Sweden,	400 pks.	W. G. Taylor & Co.
"	254	S. W. Renstrom
U. States,	1,207	Henderson, Craig, & Co.
Sweden,	304	C. S. Lovell
Germany,	18	Thames S. T. & L. Co.
Holland,	1,041	Little & Johnston
"	1,041	E. J. & W. Goldsmith
Germany,	1,016	"
"	160	M. H. Voss
Norway,	120	Alsing & Co., Ltd.
"	520 bls.	Christophersen, Andrews, & Co.
Sweden,	331	M. D. Co.
U. States,	102	L. & I. D. Jt. Co.
Sweden,	1,400	J. Sharp
Norway,	43	E. J. & W. Goldsmith
Germany,	80	T. H. Lee
U. States,	360	J. Graves
Zinc Oxide—		
Holland,	2 cks.	G. Rahn & Co.
"	20	M. Ashby, Ltd.
Germany,	2	J. Barber & Co.
U. States,	185	M. Ashby, Ltd.
Zinc Skimmings—		
U. States,	21 t.	Lon. & Til. L. C. & D. Co.

LIVERPOOL.*Week ending November 25th.*

Acetic Acid—		
Rotterdam,	20 balloons	
Albumen—		
Naples,	7 cs.	
Asbestos—		
Quebec,	240 bgs.	J. Smith & Bro.
Montreal,	200	
Barium Peroxide—		
Hamburg,	5 cks.	
Barytes—		
Ghent,	105 bgs.	
Rotterdam,	27	50 cks.
Antwerp,	34	
Boric Acid—		
Leghorn,	24 cks.	
Hamburg,	23	
Borax—		
Rouen,	6 cks.	R. J. Francis & Co.
Carbolic Acid—		
Rouen,	8 bts.	Co-op. W'sale Society, Ltd.
Castor Oil—		
Calcutta,	63 cs.	Ralli Bros.
"	200	D. Sassoon & Co.
"	196	
Chemicals (otherwise undes.)—		
Hamburg,	5 cs.	
Rotterdam,	4 cks.	
Colours—		
Hamburg,	123 cks.	2 cs.
Rotterdam,	120	11 6 tubs
Cottonseed Oil—		
New York,	150 brls.	
Cream of Tartar—		
Bordeaux,	22 cks.	
Dyestuffs—		
Argols		
Ancona,	2 cks.	
Oporto,	88 bgs.	
Cochineal		
Teneriffe,	10 bgs.	Koffs Kullmann & Co.
Gd. Canary,	25	Burrell & Co.
"	11	Roberts, Evans & W.
Diyl Diyl		
Amsterdam,	382 bgs.	
Gambier		
Singapore,	3,310 bls.	F. Bonstedt & Co.
"	747 bgs.	

Orchella Lisbon, 24 bgs. A. Barbosa & Co.	
Saffron Valencia, 41 38 bls.	
Shumac Palermo, 1,200 bgs.	
Valonia Limasol, 2 bls. Sir T. Warille	
Smyrna Smyrna, 3,324 ktlis. G. Essayan & Co.	
Patras Patras, 141 bgs.	
Smyrna Smyrna, 498	
Farina Havre, 1 sk. Cunard S.S. Co.	
Hamburg Hamburg, 10 bgs. Ltd.	
Glucose New York, 350 brls. T. M. Duche & Sons	
Glue Fiume, 200 bgs.	
Boston Boston, 2 brls.	
Rouen Rouen, 21 cks. 20 bls. Co-op. W'sale Society, Ltd.	
" " 20 bgs. R. J. Francis & Co.	
Genoa Genoa, 4 cks.	
Gypsum Hamburg, 2 cks.	
Limestone Antwerp, 2 cks.	
Molasses Boston, 21 cs. Whitford & Co.	
Ochre Rouen, 96 cks. Co-op. W'sale Society, Ltd.	
Oxalic Acid Rotterdam, 6 cks.	
Paint Hamburg, 10 dms.	
Amsterdam Amsterdam, 10 brls.	
Paraffin Scale New York, 801 brls. Thompson & Bedford	
" " 1,097 Anglo-Am. Oil Co.	
Phosphate Montreal, 470 t.	
Plumbago Genoa, 100 bgs. 15 cks. G. Huntriss & Co.	
" " 160 Leo Negri & Co.	
Potash Rouen, 137 cks. Co-op. W'sale Society, Ltd.	
Dunkirk Dunkirk, 2 20 dms.	
Hamburg Hamburg, 18	
Potassium Chloride Rouen, 400 brls. R. J. Francis & Co.	
Pumice Stone Rotterdam, 4 cs.	
Pyrites Huelva, 1,649 t. Matheson & Co.	
Rosin Savannah, 5,114 brls.	
Saltpetre Hamburg, { 50 bgs. 4 cks.	
" " 52 brls. 10 kgs.	
Soap New York, 3 cs. & qty. Colgate & Co.	
Leghorn Leghorn, 20	
Marseilles Marseilles, 5 G. Cheachay	
Bari Bari, 220	
Smyrna Smyrna, 25 bxs.	
Baltimore Baltimore, 50 cs. H. A. Lane & Co.	
Boston Boston, 6 Barclay & Sons	
Soapstone Genoa, 500 bgs. G. Huntriss & Co.	
Bordeaux Bordeaux, 330 Geo. G. Blackwell, Sons & Co.	
Sodium Nitrate Junin, 4,532 sks.	
Starch Boston, 220 brls. 100 bxs.	
Antwerp Antwerp, 156 cs. J. T. Fletcher & Co.	
" " 450	
Rotterdam Rotterdam, 200	
Stearine Ghent, 12 bgs.	
Antwerp Antwerp, 25 J. T. Fletcher & Co.	
" " 38	
Sulphur Catania, 134 brls. 100 bgs. 70 t.	
Talc Fiume, 40 bgs.	

Tallow Zarate, 254 pps. J. Nelson & Sons, Ltd.	
Baltimore Baltimore, 380 tcs.	
Tartaric Acid Rotterdam, 20 cks.	
Treacle Hamburg, 25 brls.	
Ultramarine Hamburg, 1 cs.	
Rotterdam Rotterdam, 4 cks.	
Varnish Rotterdam, 2 cks.	
Waste Salt Hamburg, 4 cks. 8,144 bgs.	
White Lead Fiume, 20 brls.	
Antwerp Antwerp, 1 cs.	
Wood Pulp Gothenburg, 7 bls. G. F. Green & Co.	
Montreal Montreal, 3,030 A. Rice & Co.	
Boston Boston, 334 rolls.	
Krageroe Krageroe, 5,229 bls. H. Tyrer & Co.	
Skein Skein, 4,837 Becker & Co.	
Zinc Oxide New York, 100 brls.	

MANCHESTER.

Week ending November 27th.

Acetanilide Rotterdam, 10 cs.	
Ammonium Acetate Rotterdam, 3 brls.	
Antimony Fluoride Rotterdam, 4 cks.	
Asbestos Antwerp, 1 cs. Vickers, Sons, & Maxim	
Barytes Rotterdam, 200 bgs.	
Colours Rotterdam, 155 brls. 31 cs.	
Rotterdam Rotterdam, 6 cks.	
Cream of Tartar Rotterdam, 10 cks.	
Extracts Rotterdam, 11 cks.	
Farina Stettin, 1,937 bgs.	
Rotterdam Rotterdam, 3,700	
Glucose Rotterdam, 14 cks.	
Glue Rotterdam, 70 bgs. 40 cs. 3 pks.	
Lead Acetate Stettin, 56 cks.	
Lithopone Stettin, 68 cks.	
Mineral White Bordeaux, 100 bgs. G. G. Blackwell, Sons, & Co.	
" " 210 J. & P. Hutchison	
Oxalic Acid Hamburg, 15 cks.	
Pitch Bordeaux, 34 cks. J. & P. Hutchison	
Potash Hamburg, 57 cks. 1 kg.	
Potassium Permanganate Hamburg, 5 cks.	
Pyrites Huelva, 1,360 t. Stott, Coker, & Co.	
Saltpetre Hamburg, 15 cks.	
Sodium Nitrate Rotterdam, 16 cks.	
Starch Rotterdam, 194 cs.	
Tar Oil Rotterdam, 10 cks.	
Tar Waste Rotterdam, 6 cks.	
Tartar Bordeaux, 1 ck.* J. & P. Hutchison	
Tartaric Acid Rotterdam, 11 cks.	
Ultramarine Rotterdam, 2 cks.	
Waste Salt Hamburg, { 1,020 bgs. and qty.	
" " 153 cks.	

Wood Pulp Stettin, 894 bdls.	
Rotterdam Rotterdam, 18 pks.	
Hamburg Hamburg, 23 bls.	
Gelle Gelle, 10,190	
Zinc Ashes Stettin, 14 cks.	
Zinc Oxide Rotterdam, 74 brls.	
Zinc White Rotterdam, 5 cs.	

HULL.

Week ending November 27th.

Acids Leghorn, 12 cks. Wilson, Sons, & Co., Ltd.	
Arsenic Hamburg, 25 cks. Wilson, Sons, & Co., Ltd.	
Asbestos Genoa, 5 pks. Wilson, Sons, & Co., Ltd.	
Barytes Amsterdam, 45 cks. W. & C. L. Ringrose	
Antwerp Antwerp, 18 100 bgs. Leatham, Ltd.	
" " 100 H. F. Pudsey	
Bremen Bremen, 44 cks. I. de Bocr	
Camphor Hamburg, 3 cks. Wilson, Sons, & Co., Ltd.	
Castor Oil Leghorn, 15 cs. Wilson, Sons, & Co., Ltd.	
Chemicals (otherwise undescribed) Antwerp, 1 ck. Bailey & Leatham, Ltd.	
Bremen Bremen, 1 ck. Veltmann & Co. Sissons Bros. & Co.	
Amsterdam Amsterdam, 5 W. & C. L. Ringrose	
Antwerp Antwerp, 10 Wilson, Sons, & Co., Ltd.	
Cod Oil Christiania, 15 brls. Wilson, Sons, & Co., Ltd.	
Bergen Bergen, 30	
Drontheim Drontheim, { 4 cks. 1 cs. "	
Aalesund Aalesund, 100 brls. "	
Colours Rotterdam, 3 brls. W. & C. L. Ringrose	
Danzig Danzig, 75 pks. "	
Antwerp Antwerp, 5 cks. Wilson, Sons, & Co., Ltd.	
Cottonseed Oil New York, 25 brls. Wilson, Sons, & Co., Ltd.	
Cryolite Copenhagen, 3 cks. Wilson, Sons, & Co., Ltd.	
Dyestuffs Alizarine Rotterdam, 19 pks. W. & C. L. Ringrose	
Cochineal Hamburg, 42 brls.	
Gambler Hamburg, 8 bgs. Wilson, Sons, & Co., Ltd.	
Indigo Hamburg, 117 pks. Wilson, Sons, & Co., Ltd.	
Logwood Rotterdam, 2 cts. Hutchinson & Son	
Madder Hamburg, 50 bgs. Wilson, Sons, & Co., Ltd.	
" " 2 cks. W. & C. L. Ringrose	
Shumac Trieste, 1 Hutchinson & Son	
Palermo Palermo, 78 bls. Wilson, Sons, & Co., Ltd.	
Valonia Smyrna, 300 bgs. "	
Farina Harlingen, 664 bgs.	
Hamburg Hamburg, 1,050 bgs. W. & C. L. Ringrose	
Harlingen Harlingen, 100 Wilson, Sons, & Co., Ltd.	
Glucose N. York, { 200 brls. and qty.	
" " 1,599 pks.	

Kaolin Antwerp, 8 brls. Wilson, Sons, & Co., Ltd.	
Lead Acetate Rotterdam, 6 cks. W. & C. L. Ringrose	
Manganese Odessa, 1 cs. Wilson, Sons, & Co., Ltd.	
Ochre Marseilles, 134 cks.	
Pitch Amsterdam, 12 cks. Hutchinson & Son	
Potash Rotterdam, 36 "	
Bremen Bremen, 1 ck. Veltmann & Co.	
Hamburg Hamburg, 7 Bailey & Leatham, Ltd.	
Pumice Stone Leghorn, 80 bls. Wilson, Sons, & Co., Ltd.	
Trieste Trieste, 5 cs. "	
Messina Messina, 60 pks. "	
Pyrites Huelva, 840 t.	
Saltpetre Antwerp, 135 bgs. Wilson, Sons, & Co., Ltd.	
Soap New York, 800 bxs.	
Marseilles Marseilles, 30 cs. Wilson, Sons, & Co., Ltd.	
Bari Bari, 100 "	
Soda Ghent, 10 bgs.	
Antwerp Antwerp, 3 cks. Bailey & Leatham, Ltd.	
" " 17 Wilson, Sons, & Co., Ltd.	
Starch Rotterdam, 225 pks. Hutchinson & Son	
Ghent Ghent, 164 cs. Wilson, Sons, & Co., Ltd.	
Bremen Bremen, 1,121 Veltmann & Co.	
Rotterdam Rotterdam, 60 Reckitt & Sons	
Sulphur Catania, 100 bgs. Wilson, Sons, & Co., Ltd.	
" " 720	
Talc Leghorn, 2 bgs. Wilson, Sons, & Co., Ltd.	
Genoa Genoa, 20 "	
Tar Stockholm, 10 brls. Wilson, Sons, & Co., Ltd.	
Tartar Bordeaux, 10 cks. Rawson & Robinson	
Naples Naples, 3 cks. Wilson, Sons, & Co., Ltd.	
Bari Bari, 28 "	
Treacle New York, 94 brls. Wilson, Sons, & Co., Ltd.	
Ultramarine Rotterdam, 4 cks. W. & C. L. Ringrose	
White Lead Amsterdam, 27 cks. W. & C. L. Ringrose	
Rotterdam Rotterdam, 16 Hutchinson & Son	
" " 20 W. & C. L. Ringrose	
Wood Pulp Gothenburg, 638 bls. Wilson, Sons, & Co., Ltd.	
Christiania Christiania, 656 "	
Drontheim Drontheim, 2,320 "	
Helsingfors Helsingfors, 177 J. Good & Sons	
Zinc Oxide Rotterdam, 20 cks. W. & C. L. Ringrose	
Antwerp Antwerp, 60 Bailey & Leatham, Ltd.	

GLASGOW.

Week ending December 2nd.

Albumen Rouen, 8 cks.	
Alkali Rotterdam, 31 cks. J. Rankine & Son	
Alumina Rotterdam, 202 bgs. J. Rankine & Son	

Alumina Sulphate — Rotterdam, 31 cks. J. Rankine & Son	Lamp Black — Antwerp, 7 cks.	Waste Salt — Hamburg, 180 t.	Dyestuffs (otherwise undescribed) Boulogne, 11 cks. 2 cs. 137 pks.
Arachide Oil — Rotterdam, 1 ck. J. Rankine & Son	Methyl Alcohol — Antwerp, 15 dms.	White Lead — Rotterdam, 38 cks. J. Rankine & Son	Farina — Delfsryhl, 64 bgs.
Asbestos — New York, 502 bgs. Montreal, 300	Mineral White — Genoa, 100 bgs.	Wood Pulp — Drontheim, 120 bls. Christiania, 2,410 54 cs.	Glue — Boulogne, 1 cs.
Barium Sulphate — Antwerp, 750 bks.	Ochre — Rouen, 40 cks.	Zinc White — Rotterdam, 15 pks. J. Rankine & Son	Lead Acetate — Hamburg, 18 cks.
Barytes — Hamburg, 300 bgs. Rotterdam, 87 cks. J. Rankine & Son	Potash — Hamburg, 111 dms. Rotterdam, 55 cks. J. Rankine & Son		Madder — Rotterdam, 5 cks.
Borax — Hamburg, 2 cks.	Potassium Chlorate — Marseilles, 16 cks.	TYNE.	Plumbago — Boulogne, 13 cks. 4 cs.
Castor Oil — Marseilles, 60 cks. Leghorn, 10 cs. 5 pipes.	Purple Ore — Rouen, 670 t.	<i>Week ending November 27th.</i>	Potash — Hamburg, 5 cks.
Chemicals (otherwise undescribed) Hamburg, 2 cks.	Pyrites — Huelva, 2,019 t. Tharsis Co.	Alum Earth — Hamburg, 45 cks. Tyne S. S. Co.	Soda — Rotterdam, 20 cks.
Chrome Ore — Hamburg, 50 bgs.	Salt — Hamburg, 6 cs.	Barium Chlorate — Rotterdam, 350 bgs. Tyne S. S. Co.	Sodium Silicate — Rotterdam, 4 cks.
Colours — Antwerp, 3 cks. J. Rankine & Son Rotterdam, 9 cs. 6 bls. 1 cs.	Saltpetre — Hamburg, 10 bgs.	Barytes — Rotterdam, 57 cks. Tyne S. S. Co.	Starch — Gher t, 102 cs.
Cottonseed Oil — New York, 205 bls.	Soap — Rouen, 4 cs. Montreal, 50 bxs.	Colours — Hamburg, 10 cs. Tyne S. S. Co.	Tartaric Acid — Rotterdam, 2 cks.
Dyestuffs — Alizarine Rotterdam, 67 bls. J. Rankine & Son 1 bx.	Sodium Chlorate — Rouen, 20 bls.	Glucose — New York, 50 trls. Furness, Withy, & Co.	Waste Salt — Hamburg, 550 bgs.
Aniline Rotterdam, 38 bls. J. Rankine & Son 9 bxs.	Sodium Nitrate — Caleta Buena, 17,756 bgs.	Glue — Hamburg, 2 cks. Tyne S. S. Co.	Wood Pulp — Antwerp, 1,376 pks.
Aniline Colours Hamburg, 1 cs. 3 cks.	Sodium Sulphate — Antwerp, 17 cks.	Lamp Black — New York, 30 cs. Furness, Withy, & Co.	GRIMSBY.
Extracts Antwerp, 1 ck.	Starch — New York, 1,100 bxs. 100 bgs. Antwerp, 20 cs. J. Rankine & Son	Magnesia — Antwerp, 1 cs. Tyne S. S. Co.	<i>Week ending November 27th.</i>
Logwood Belize, 103 t. Allison, Cousland & Co.	Stearine — Rotterdam, 17 cs. J. Rankine & Son	Phosphate — Antwerp, 280 bgs. Tyne S. S. Co.	Aniline — Hamburg, 16 pks.
Jamaica , 1,025 Mucklow & Co.	Tallow — New York, 100 tcs. J. Rankine & Son Rotterdam, 10	Saltpetre — Hamburg, 1 ck. Tyne S. S. Co.	Barytes — Rotterdam, 107 bgs. Antwerp, 90
Madder Rotterdam, 2 cks. J. Rankine & Son	Tartar — Oporto, 3 cks.	Starch — Rotterdam, 60 cs. Tyne S. S. Co.	Caoutchouc — Rotterdam, 2 cs.
Farina — Delfsryhl, 1,600 bgs. J. Rankine & Son	Tartaric Acid — Antwerp, 9 cks. Hamburg, 8	Wood Pulp — Christiania, 548 bls.	Chemicals (otherwise undescribed) Hamburg, 9 cks.
Glucose — Philadelphia, 600 bls.	Treacle — New York, 550 bls. Philadelphia, 100 50 hf-brls. New York, 565 Waddell & Bryson	Zinc Oxide — Rotterdam, 20 cks. Tyne S. S. Co.	Dyestuffs (otherwise undescribed) Hamburg, 22 cks. 6 cs. 98 pks. Antwerp, 5 38 46
Glue — Rouen, 31 cks. 40 cs. Hamburg, 100 bgs. Rotterdam, 40 J. Rankine & Son	Ultramarine — Hamburg, 100 cs.	GOOLE.	Paint — Hamburg, 10 drs.
	Varnish — New York, 10 bls. Antwerp, 2 cks. 2 tins.	<i>Week ending November 24th.</i>	Plumbago — Hamburg, 1 ck.
		Alizarine — Rotterdam, 48 bls.	Starch — Hamburg, 5 cs.
		Bleaching Powder — Rotterdam, 9 cks.	Waste Salt — Hamburg, 500 bgs.
		Colours — Hamburg, 3 cs.	Zinc Ashes — Antwerp, 10 cks.

EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.	Borax — Rio de Janeiro, 1 t. £14 Durban, 8 c. 14 Delagoa Bay, 3 cs. 11	Citric Acid — Odessa, 2 c. £16 Durban, 3 18 Lisbon, 5 cks. 40 Hamburg, 6 pks. 55 Amsterdam, 1 t. 5 kgs. 145 Pt. Elizabeth, 1 6 Libau, 10 60 Genoa, 1 120 Canterbury, 2 13 Bermuda, 1 8	Alexandria, 100 cks. 48 Calcutta, 100 41
<i>Week ending December 1st.</i>	Carbonic Acid — Delagoa Bay, 1 cs. £6 Melbourne, 3 14 Hong Kong, 20 dms. 8 Pt. Elizabeth, 2 11 Calcutta, 3 14	Coal Products — Alizarine Madras, 35 cks. £93 Bombay, 25 104 Lisbon, 2 33 Reval, 11 cs. 550	Pyrilene Bases Hamburg, 2 dms. £65
Acetate of Lead — Pt. Elizabeth, 10 c. £16	Caustic Soda — Shanghai, 3 c. £5 Philadelphia, 134 t. 902 Durban, 1 10 32 Rio de Janeiro, 3 6 25	Aniline Calcutta, 1 cs. £17	Tar Helsingfors, 1,700 bls. £650 Delagoa Bay, 90 dms. 7 Calcutta, 102 48
Acids — Cape Town, 20 pks. £14	Chemicals (otherwise undescribed) Genoa, 15 kgs. £89 Rockhampton, 2 cks. 4 23 Rotterdam, 8 84 Amsterdam, 1 brl. 13 Adelaide, 5 21 pks. 31 Sydney, 2 cs. 25 Rosario, 20 40 Napier, 2 kgs. 12 Bombay, 1 15 cs. 11 84 Fremantle, 27 21 Madras, 7 15 Greymouth, 5 kgs. 20 Antwerp, 38 283 Demerara, 25 cs. 100 crl. bxs. 32 Dunkirk, 87 1,100	Aniline Oil Rotterdam, 10 dms. £350	Coal Products (otherwise under-) Boston, 10 pks. £135
Alkali — Napier, 2 t. £13	Ammonia — Hiogo, 7 t. £176	Benzine Shanghai, 4 dms. £6	Copper Sulphate — New York, 5 c. £5 Odessa, 23 t. 431 Paris, 25 421 Rio de Janeiro, 2 13 47 Riga, 1 173 Rotterdam, 1 10 27 Bordeaux, 10 168 Dunkirk, 5 84
Alum — Rio de Janeiro, 2 t. £11	Ammonia (Liquid) — Messina, 9 c. £10	Benzol Rotterdam, 150 cks. £637	Copperas — Madras, 5 t. 7 c. £13 Cologne, 8 13
Ammonia — Messina, 9 c. £10	Ammonium Chloride — Shanghai, 108 kgs. £96 Durban, 30 6 cs. 94	Creosote St. Malo, 21,602 galls. £187	Cream of Tartar — Durban, 13 c. £51 Canterbury, 5 19
Ammonium Sulphate — Jersey, 7 t. 5 c. £60 Hamburg, 171 1,166 Dunkirk, 10 85 Durban, 5 2 51 Antwerp, 47 13 430 Berbice, 30 260 Bremen, 79 10 736	Arsenic — Wellington, 3 t. 6 c. £71	Naphthalene Hamburg, 6 cks. 611 bgs. £193 Cologne, 6 55	Disinfectants — Penang, 20 dms. £15 Hong Kong, 128 pks. 99 Fochow, 2 cks. 43 Colombo, 650 130 Cape Town, 30 11 Auckland, 12 17 Paris, 12 17 Pt. Elizabeth, 5 cs. 11 Fremantle, 60 15
Bleaching Powder — Rio de Janeiro, 1 t. £8		Pitch Cape Town, 21 cks. 3 cs. 3 bls. £22 Helsingfors, 30 t. 310 Cette, 1,688 Boston, 28 35 Antwerp, 820 918	

Calcutta, 2 515 38	Ammonium Chloride—	Malta, 743	Melbourne, 11 173
Durban, 2 515 38	Genoa, 13 c.	Manila, 79	Bordeaux, 208 17 3,205
Hamburg, 25 cks. 195	Naples, 6 9	Maracaibo, 10	Syria, 13 12 2 224
Bombay, 60 20	Constantinople, 10 15	Melbourne, 314	Salonica, 2 10 30
Manure—	Libao, 1 t. 12	Mersyne, 10 cks.	Naples, 5 2 1 81
Calicut, 11 f. 3 c.	Malta, 210	Messina, 25	Singapore, 2 1 34
Cape Town, 230	Danzig, 4 7	M. Video, 155	Copperas —
Demerara, 100	Volo, 10 15	Naples, 158	Madras, 2 t. 2 c. 2 q. 64
Singapore, 90 17	Lomaca, 4 6	Nagasaki, 100	Bangkok, 2 3 1 5
Jersey, 172	Trieste, 1 31	New York, 572 100 brls.	Disinfectants —
Muriatic Acid—	Ammonium Sulphate—	Odessa, 275	Bombay, 50 cks. 62
Campana, 2 t.	Passages, 10 t. 680	Oporto, 114	Calcutta, 5 t. 10 c. 40 dms. 107
Nitric Acid—	Cullera, 50 450	Parnahyba, 6	Dried Blood—
Madras, 1 t. 17 c.	Castellon, 100 15 c. 927	Pelotas, 5	Gd. Canary, 5 t. 628
Oxalic Acid—	Gd. Canary, 50 10 462	Pernambuco, 25	French Chalk—
Syria, 15 c.	Venice, 40 350	Philadelphina, 100 17 crts.	Bombay, 150 bgs.
Oxygen—	Norfolk, Vga., 25 10 225	Pireus, 20	Guanó—
Amsterdam, 1 cs.	Leghorn, 25 7 203	Pt. Natal, 38 84 bxs.	Valencia, 20 t. 13 c. 6120
Potash Salts—	Honolulu, 264 2,310	Porto Cabello, 20	Hydrochloric Acid—
Auckland, 2 t. 1 c.	Valencia, 226 9 2 q. 1,960	Rangoon, 35	San Juan, 1 t. 2 c. 616
Potassium Bichromate—	Las Palmas, 5 9	Reval, 50	Iron Oxide—
Rio de Janeiro, 1 t.	Genoa, 64 17 575	Rio de Janeiro, 20	St. John's, 2 t. 5 c. 612
Potassium Chlorate—	Antimony Sulphide—	Rotterdam, 157	Magnesia—
Calcutta, 1 t.	Boston, 8 c. 2 q. 665	St. John's, 10	E. London, 5 cs.
Pt. Elizabeth, 5 c.	Bleaching Powder—	Santos, 50	Havre, 8
Shanghai, 5	Ancona, 67 cks.	Seville, 135	New York, 10
Madras, 1	Baltimore, 113	Singapore, 5 brls.	Odessa, 35
Bombay, 2	Boston, 775	Sourabaya, 75 25	Manure—
Potassium Cyanide—	Calcutta, 105 cs.	Stettin, 25	Teneriffe, 8 t. 656
Trinidad, 1 t. 2 c.	Genoa, 205	Sydney, 314	Marseilles, 15 18 c. 2 q. 55
Hio, 10 cs. 28	Leghorn, 7	Tampico, 100	Muriatic Acid—
Karachi, 2	Lisbon, 25	Tarragona, 40	Pernambuco, 17 c. 610
E. London, 5	Naples, 30	Wellington, 8 65 bxs.	Oxalic Acid—
Pt. Elizabeth, 5	Newport News, 108	Yokohama, 5 pks.	New York, 2 c. 64
Rio de Janeiro, 1 18	New York, 499 70 pks.	Chemicals (otherwise undescribed)	Paint—
N. Orleans, 90	Norroping, 18	Cadiz, 2 c. 610	Alexandria, 55 dms. 50 kgs.
Delagoa Bay, 5 5	Oporto, 6	Patras, 9 15	Almeria, 2 cks.
Potassium Oxalate—	Philadelphina, 291	Boston, 5 t. 4 302	Bahia, 8 brls.
Trepot, 19 c.	St. John's, 5 brls.	Syria, 3 13 3 q. 108	Beyrout, 10 95
Saltpetre—	Venice, 51	Palermo, 0 9	Bilbao, 28 dms. 24 tins
Oporto, 7 t. 7 c.	Boracic Acid—	Calcutta, 35 12 95	Bombay, 119 kgs.
Dunedin, 10 10	Rotterdam, 1 t. 630	Portland, 1 30	Bordeaux, 100
Rio de Janeiro, 14 12	Borax—	Philadelphina, 20 602	B. Ayres, 20
Santos, 3 7 65	Antwerp, 1 t. 10 c. 630	China Clay—	Cabenda, 20
Sheep Dip —	B. Ayres, 4 8	Bombay, 60 cks.	Calcutta, 265
E. London, 4 t. 4 c.	Gothenburg, 1 2 q. 17	Boston, 803 512 t.	Callao, 25 cs.
B. Ayres, 107 1	M. Video, 16 13	Calcutta, 774	Cape Town, 30 6 pks.
Pt. Elizabeth, 620 dms. 135	Trieste, 1 16	Madras, 160	Cavite, 21
Soda —	Hamburg, 6 91	Maranham, 48	Colon, 8
Rotterdam, 5 t.	Copenhagen, 1 16	Newport News, 159	Hamburg, 5
New York, 2 10	Genoa, 5 cs. 12	Oporto, 200 bgs.	Havana, 4
Soda Ash—	Yokohama, 2 t. 10 50	Pernambuco, 30	Havre, 3
Wellington, 8 t. 11 c.	Stettin, 2 17 3 43	Vera Cruz, 100	Hong Kong, 110 201 kgs.
Rio de Janeiro, 20 15 87	New York, 2 2 2 32	Citric Acid—	Honolulu, 1 65
Soda Crystals—	Calcium Chloride—	B. Ayres, 8 c. 645	Iquique, 45 cs. 24 pks.
Cape Town, 5 t. 7 c.	Venice, 6 t. 12 c. 621	Pireus, 1 5	Karachi, 6
Sodium Acetate—	Melbourne, 7 14 17	Copenhagen, 3 t. 8 65	Kingston, 6
Calcutta, 6 c.	Sydney, 11 2 24	Odense, 3 3	Lagos, 60 kgs.
Sodium B. carbonate—	M. Video, 5 4 17	Coal Products—	Lanzarote, 3
Yokohama, 10 c.	Boston, 29 18 58	Aniline, 3 cks.	Las Palmas, 125
Malta, 1 t.	Rouen, 10 22	Aniline Dyes, 7 cs.	Leghorn, 35
Pt. Elizabeth, 2 7	Carbolic Acid—	Aniline Oil, 5 dms.	Loando, 2
Sodium Sulphate—	Philadelphina, 15 dms. 6143	Aniline Salts, 62 cs.	Loango, 25
Wellington, 10 t. 1 c.	Hamburg, 6 t. 8 c. 428	Anthracene	Manila, 300
Ghent, 100 150	Cadiz, 1 10 2 q. 34	Rotterdam, 130 cks.	Messina, 40 pks.
Sulphate of Lime—	Penang, 1 7 3 16	Creosote Oil	New York, 6
Sydney, 3 t.	Hio, 2 10 157	N. Orleans, 320 brls.	Parnahyba, 6
Sulphur—	Portland, M., 12 2 41	Pitch	Penang, 40 dms.
Pt. Elizabeth, 1 t. 12 c.	Boston, 17 3 62	Marseilles, 1,533 t.	Pernambuco, 10 cs.
Sulphuric Acid—	Genoa, 1 3 13	St. Louis, 1,200	Rangoon, 600 kgs.
Cape Town, 2 t. 5 c.	Rouen, 1 16 125	Victoria, B.C., 10 brls.	St. John's, 2 51
Tartaric Acid—	Dunkirk, 1 10 105	Wellington, 2	San Juan, 100
Durban, 3 c.	Rotterdam, 14 5 845	Tar	Shanghai, 40 dms.
Bombay, 2 13 kgs. 63	Caustic Potash—	Accra, 5 t. 9 c.	Tampico, 3 cs.
Canterbury, 9 13	Wellington, 2 c.	Guayaquil, 56 kgs.	Valparaiso, 24 34 dms.
Hamburg, 2 54	New York, 17 t. 16 428	Hamburg, 186 brls.	Vigo, 12
Wellington, 3 79	Caustic Soda—	Philadelphina, 400	Yloilo, 7
Pt. Elizabeth, 5 26	Alexandria, 277 dms.	Coal Products (otherwise undes.)—	Yokohama, 100
LIVERPOOL.	Amsterdam, 173	Genoa, 42 pks.	Painters' Colours—
Period ending December 1st.	Antwerp, 132	Cobalt Oxide—	Alexandria, 40 cks.
Albumen—	Bahia, 12	Gijon, 1 c. 3 q. 662	Algoa Bay, 5
Vera Cruz, 15 c.	Barcelona, 225 74 cks. 72 pks.	Copper Sulphate—	Bremen, 300 bgs.
Alum—	Bari, 101	Sourabaya, 5 t. 17 c. 3 q. 692	Boston, 4 cs. 2 brls.
Galatz, 7 t. 6 c. 3 q. 634	Bombay, 60 54 brls.	Fiume, 60 1 913	B. Ayres, 5 2 brls.
Porto Alegre, 3 1 2 15	Boston, 10	Bombay, 5 80	Malaga, 8 29 bgs.
Piraeus, 2 18 14	Bremen, 10	Vera Cruz, 5 12 10	Genoa, 1
Smyrna, 13 3 72	B. Ayres, 144	Madras, 1 5 20	New York, 1
Madras, 26 3 2 144	Cartagena, N.G. 40	Odessa, 9 19 151	Oporto, 1 cs. 100
Alumina Sulphate—	Colon, 20	Batoum, 50 848	Para, 4 pks. 7
Naples, 8 t. cks. 680	Dunkirk, 38	Rouen, 9 17 157	Ponce, 7 cks.
Ammonium Carbonate —	Fiume, 100	Guayaquil, 1 17	Rio de Janeiro, 2
Barcelona, 1 t. 625	Genoa, 428	Riga, 4 18 78	St. John's, 10 100
Melbourne, 1 9 c. 13	Gothenburg, 5 18 cs.	Leghorn, 20 3 305	Yokohama, 200 kgs.
Rotterdam, 1 23	Hamburg, 16 10 18 cs.	Catacola, 11 18 3 200	Paraffin Wax—
Marseilles, 18 27	Havana, 40	Genoa, 19 18 312	Constantinople, 1 cs.
	Hio, 275	Palermo, 2 10 1 38	Genoa, 46 bgs.
	Honolulu, 70	Algiers, 48 5 3 740	Jaffa, 20
	Ibrail, 35	M. Video, 4 10 3 74	Leghorn, 40
	Konigsberg, 18	Calamata, 6 3 2 94	Patras, 10 pks.
	Leghorn, 75	Wellington, 1 16	Rio de Janeiro, 6 14 dms.
	Lisbon, 264	Livertlon, 2	Sourabaya, 14 dms.
	Madeira, 85		Syria, 8

Phosphorus—

Osaka,	15 c.	£150
Hioho,	4 t. 5	1,000
Shanghai,	1 8	280
Vera Cruz,	3	33

Picric Acid—

New York,	15 cks.	£250
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Potassium Bichromate—

Salonica,	10 c.	£21
Vera Cruz,	2 t. 4	95
Passages,	1 5	47
Ghent,	5 3	221
Montreal,	6 3	1 q. 200
Patras,	1 ck. 1 brl.	16
Marseilles,	1 t. 13 c.	62

Potassium Carbonate—

Hamburg,	1 t. 13 c.	1 q. £33
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Potassium Chlorate—

Naples,	1 t.	£36
Hamburg,	1	36
Rio de Janeiro,	3	18 c. 143
New York,	20	600
Sydney,	1	30
Copenhagen,	5	160
Philadelphia,	5	150
Konigsberg,	10	15
Rotterdam,	1	36
Gotenburg,	18	572

Potassium Cyanide—

Corinto,	4 t. 1 c.	2 q. £399
New York,	10	49

Potassium Prussiate—

Vera Cruz,	2 t.	£110
Genoa,	4 cks.	56

Salt—

Accra,	6 t. 5 c.	
Antwerp,	480	9 9,560 sks.
Astoria,	30	
Baltimore,	990	
Bata,	11	2
Benin,	15	12
Bomaka,	11	2
Boston,	300	
B. Ayres,	100	
Calcutta,	984	
Cameroons,	140	16
Cette,	11	2
Conakry,	84	9
Demerara,	1,000 brls. 1 hd.	25 cs. 100 sks.
E. London,		
Egwanga,	60 t. 3 c.	
Ghent,	325	
Gd. Bassam,	20	5,605
Honolulu,	25	
Lagos,	100	
	625 bgs.	
Manaos,	214 t. 7	
Melbourne,	60	
Mossel Bay,		565
Newcastle,	25	
N. Orleans,	695	
Newport News,	150	
New York,	83	
Noqui,	116	
Norrkoping,	50	
Old Calabar,	40	3
Opobo,	130	7
Para,	146	18
Philadelphia,	42	10
Portland,	1,400	
Portland, Me.,	15	10
Pt. Natal,	100	
Rosario,		1 cs.
Rotterdam,	600	
St. John's,	718	
San Francisco,	828	11
Sapeli,	70	6
Sydney,	27	16
Taconia,	265	
Valparaiso,	200	
Vancouver,	553	
Victoria,	790	
Yokohama,	3	3

Salt Cake—

Lisbon,	40 t.	£88
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Saltpetre—

New York,	10 c.	£11
Parnahyba,	1 t. 6	3 q. 28
Ceara,	19	3 21
Progresso,	2	2
Bitbao,	2	38

Sheep Dip—

Algoa Bay,	6 t.	£125
Punta Arenas,	4	9 c. 1 q. 187
B. Ayres,	300 dms.	200
Gallego,	200 glns.	145
	3 t. 10	
M. Video,	7 16	3 219

Soap—

Accra,	354 bks.	
Alexandria,	45 cs. 10 kgs.	
Algoa Bay,	1,275	25 bds.

Amsterdam,	476 bks.	
Annamaboe,	105	
Antwerp,	20	1,800 cs.
Appam,	50	
Axim,	50	
Barbadoes,	892	4
Bangkok,	50	
Batavia,	3,000	
Belize,	810	
Beira,	660	
Bombay,	118	30
Bouthe, W.C.A.,	40	
B. Ayres,	2	
Cabenda,	200	2
Calcutta,	612	20 975
Cameroons,	570	
C. C. Castle,	249	
Cape Coast,	50	
Cape Town,	1,105	10
Colon,	600	
Conakry,	290	
Constantinople,	22	
Curacao,	100	
Delagoa Bay,	930	
E. London,	1,725	505 pks.
Elmina,	100	
Gaboon,	130	
Genoa,	300	
Gibraltar,	100	40
Halifax,	395	
Guayaquil,	250	
Hamburg,	1,032	
Havre,	500	
Hong Kong,	421	
Iquique,	4	
Kingston,	1,900	
Lagos,	811	
Lanzarote,	160	
Las Palmas,	311	
Macassar,	600	
Madras,	5	
Malta,	25	8 crts.
Manaos,	990	
Melilla,	100	
Menado,	1,000	
Monrovia,	28	
M. Video,	2	
New York,	210	20
Old Calabar,	24	
Opobo,	2,620	
Patras,	50	
Philadelphia,	25	
Piræus,	47	
Pt. Elizabeth,	1,050	220
Portland, Me.,	1	13 bds.
Pt. Natal,	1,082	
Porto Novo,	200	
Pt. Said,	200	
Punta Arenas,	40	
Quittah,	25	
Rangoon,	1,500	2
Rotterdam,	300	
St. John's,	825	
St. Lucia,	130	
Salt Pond,	175	
Samarang,	10	
San Francisco,	53	
Sassandra,	56	
Shanghai,	2,000	20
Sierra Leone,	105	176
Singapore,	702	
Smyrna,	54	
Sydney,	246	
Teneriffe,	949	
Trinidad,	1,320	
Valparaiso,	50	1
Winnabah,	50	
Yloilo,	52	
Yokohama,	22	

Soda—

Santos,	50 kgs.	
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Soda Alkali—

La Guayra,	20 cs.	
Las Palmas,	20 brls.	
Melbourne,	300 cks.	
Odessa,	50	
Pt. Natal,	200 bgs.	
Sydney,	71	

Soda Ash—

Aarhus,	1,368 bgs.	
Amsterdam,	20	
Antwerp,	4,550	
Barcelona,	20 kgs.	
Boston,	2,640 bgs.	48 tcs. 155 cks. 150
B. Ayres,	100	
Copenhagen,	100	30 brls.
Corfu,	234	
Genoa,	350	68 tcs.
Ghent,	100	104
Hamburg,	100	2
Madras,		75
M. Video,		
N. Orleans,	400	
New York,	2,130	46 80
Philadelphia,	2,040	124

Pt. Natal,

20 kgs.	
R'terdam,	100
Salonica,	1,324 bgs.
Sydney,	70 brls. 69
Venice,	200 18
Volo,	10
Yokohama,	400
Zante,	514

Soda Crystals—

Alexandria,	70 brls.	
Almeria,	5 bgs.	
Boston,	336	2 cs.
Calcutta,	33 kgs.	
Gibraltar,	40	
Karachi,		24 pks.
Madras,	25	
New York,		140 cks.
Pernambuco,	10	
Valparaiso,	10	

Sodium Acetate—

Venice,	3 cks.	
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Sodium Bicarbonate—

Aarhus,	75 kgs.	
Algoa Bay,	20	
Antwerp,	5	18 cks.
Barcelona,	60	
Bombay,	160	
Brindisi,	50	10
B. Ayres,	100 bgs.	70
	200 kgs.	6
Colombo,	100	
Dunedin,	7	
Dunkirk,	20	
Havana,	20	
Honolulu,	20	
Karachi,	250	
Las Palmas,	7	
Madras,	100	15 pks.
Malaga,		
Malta,	24 bgs.	
Marseilles,	122 kgs.	
Melbourne,	845	11
M. Video,	150	
Naples,	72	
N. Orleans,		83 brls.
New York,	130	
Odessa,	100	
Palemo,	27	5
Pt. Natal,	140	
Rangoon,	240	5
Reval,	75	
Riga,	100	
Rotterdam,	80	
St. John's,	500	
Singapore,		15
Smyrna,	60 pks.	
Sourabaya,		2
Sydney,	800	26
Varna,	40	20 brls.
Vera Cruz,	12	
Wellington,	10 bgs.	
Yokohama,	1,500 kgs.	

Sodium Carbonate—

Boston,	56 brls.	
New York,	196	

Sodium Chlorate—

Hamburg,	100 kgs.	
Reval,	200	
Rotterdam,	100	

Sodium Sulphate—

Rio de Janeiro,	30 kgs.	
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Starch—

Santos,	4 cs.	
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Sulphur—

Copenhagen,	20 t. 2 c.	£85
Parnahyba,	6	2
Pernambuco,	1 6	3 q. 0
Boston,	175	7 758
Gotenburg,	75	3 320

Sulphuric Acid—

Pernambuco,	5 c.	£2
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Superphosphates—

Gd. Canary,	19 t. 10 c.	£65
Marseilles,	9	18
Valencia,	45	112
Malaga,	24	50
Las Palmas,	25	73

Tartaric Acid—

Bahia,	1 c. 3 q.	£12
Progresso,	1	7

Varnish—

Boston,	20 pks.	
Cadiz,	16 cs.	
Corfu,	2	
Hamburg,	1	
Hioho,	8 cks.	
Lisbon,	1	
Penang,	9	
San Sebastian,	2 brls.	
Santander,	1 cs.	
Valparaiso,	15	16 dms.

White Lead—

Algoa Bay,	180 dms.	
Calcutta,	20 cks.	1,000
Karachi,		1,800
Pt. Natal,	20 kgs.	

Zinc Chloride—

Calcutta,	6 c.	
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MANCHESTER

Period ending December 1st

Acids—

Alexandria,	12 cks. 15 cs.	
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Alum—

Alexandretta,	56 brls.	
Beyrout,	20	
Mersyne,	38	
Tripoli,	5	

Ammonium Carbonate—

Hamburg,	20 cks.	
Rotterdam,	1	

Ammonium Chloride—

Alexandria,	20 cks.	
Beyrout,	3 brls.	
Mersyne,	6	

Aniline Colours—

Rotterdam,	18 kgs. 1 cs.	
Rouen,	1	
Hamburg,	8 1	1 bx.

Aniline Oil—

Hamburg,	10 dms.	
Rotterdam,	12	

Aniline Salts—

Hamburg,	10 cks.	
Rotterdam,	10 pns.	

Antimony—

Antwerp,	1 ck.	
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Carbolic Acid—

Antwerp,	10 brls.	
Rouen,	8 cs. 277 bts.	
Hamburg,	100 cks.	

Caustic Soda—

Limassol,	10 dms.	
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Copper Sulphate—

Alexandria,	7 brls.	
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Copperas—

Beyrout,	34 brls.	
Susa,	15	

Creosote—

Rotterdam,	1 brl.	
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Dyestuffs (otherwise under.)—

Rouen,	qty.	
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Farina—

Ghent,	1 ck.	
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Glue—

Antwerp,	10 cks.	
Rotterdam,	22	

Linseed Oil—

Alexandria,	50 brls.	
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Logwood—

Rouen,	qty.	
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HULL.

Week ending November 27th.

Alkali—		
Abo,	7 cks.	
Trieste,	39	
New York,		122 dms.
Ammonium Sulphate—		
Bremen,	301 bgs.	
Hamburg,	500	
Anthracene—		
Amsterdam,	31 cks.	
Barium Carbonate—		
Stettin,	147 bgs.	
Barytes—		
New York,	123 cks.	
Bleaching Powder—		
Stettin,	19 cks.	
Carbolic Acid—		
Amsterdam,	12 cks.	10 btl.
Chemicals (otherwise undescribed)		
Antwerp,	7 cks.	255 kgs.
Bari,	10	20 cs.
Bergen,		361 slbs.
Bombay,	1,462	
Copenhagen,	71	4 pks.
Christiania,	12	1 2,973 slbs.
Drontheim,		
Gothenburg,	8	15 pks.
Hamburg,	25	182 3
Hango,	2	
Konigsberg,	16	2
Kurrachee,	1,257	
Liban,		6
New York,	197	400 kgs.
Odessa,	369	
Rotterdam,		40
Stettin,	147	4 pks.
Trieste,	134 bgs.	
Venice,	20	35
Cottonseed Oil—		
Amsterdam,	1,720 c.	
Antwerp,	1,456	
Copenhagen,	103	
Constantinople,	115	
Christiania,	10	
Christiansand,	35	
Gothenburg,	100	
Ghent,	101	
Hamburg,	881	
Konigsberg,	100	
Rotterdam,	1,327	
Trieste,	403	
Creosote—		
Antwerp,	30 dms.	
Dyestuffs (otherwise undescribed)		
Christiania,	42 bgs.	
Hamburg,	5 cks.	
Rotterdam,	93	
Reval,		3 cs.
Stettin,	60 bgs.	
Guano—		
Dunkirk,	100 sks.	
Linseed Oil—		
Bombay,	696 c.	
Copenhagen,	70	
Constantinople,	123	
Christiania,	168	
Drontheim,	37	
Kurrachee,	134	
Stettin,	309	
Trieste,	35	
Manure—		
Antwerp,	178 bgs.	
Dunkirk,	619	
New York,	250	
Ochre—		
Hamburg,	2 cks.	
Rotterdam,	1	
Stockholm,	2	
Painters' Colours—		
Abo,	17 cks.	
Amsterdam,	12	4 cs.
Antwerp,	69	35
Bremen,		250 pks.
Bombay,	102	308
Copenhagen,	35	4
Christiania,	50	
Drontheim,		20 dms.
Hamburg,	18	20 pks.
Harlingen,		7
Konigsberg,	32	
Kurrachee,		7
Messina,	4	
New York,	257	85 kgs.
Rotterdam,	9	26 dms.
Stavanger,		2
Stockholm,		2
Stettin,	71	

Phosphate—

Venice,	240 L.	
Pitch—		
Antwerp,	193 L.	
Dunkirk,	250	
Soap—		
Amsterdam,	100 bxs.	1 cs.
Copenhagen,		
Christiania,	1 ck.	
Drontheim,	20 bxs.	
Starch—		
Gothenburg,	1 cs.	
Tallow—		
Bombay,	1 ck.	
Stockholm,	23	
Tar—		
Aalesund,	10 cks.	
Antwerp,		1 cs.
Bremen,	10	
Copenhagen,	11	
Drontheim,	5	
Gothenburg,	3	
Hamburg,	3	
Stavanger,	10	
Stettin,	5	
Treacle—		
Abo,	5 cks.	
Turpentine—		
Antwerp,	30 dms.	
Varnish—		
Amsterdam,	1 cs.	
Antwerp,	2	
Dunkirk,	1	
Stockholm,	1	
Wolfram Ore—		
Hamburg,	4 pks.	

GLASGOW.

Week ending December 2nd.

Alum—		
Stockholm,	£10	1 cs.
Ammonium Carbonate—		
Christiania,	£15	
Rangoon,	25	
Stockholm,	68	
Ammonium Sulphate—		
Baltimore,	597 t.	5 1/4 c.
Rotterdam,	50	19
France,	475	14
Penang,	100	
Asbestos—		
E. London,	£28	
Bichromate—		
Rotterdam,	1 t.	2 c.
Boracic Acid—		
U.S.A.,	£118	
Hiogo,	£10	108.
Borax—		
U.S.A.,	£13	128.
Caustic Soda—		
Seville,	38 t.	12 1/4 c.
Coal Products—		
Creosote Oil		
Danzig,	15 t.	
Pitch		
Danzig,	51 t.	3 c.
Rotterdam,	10	15
Tar		
Christiania,	£30	
Danzig,	11 t.	15 c.
Coal Products (otherwise undes.)—		
Rotterdam,	£255	
Cod Oil—		
Brisbane,	£38	
Dextrine—		
U.S.A.,	22 t.	13 1/4 c.
Dyestuffs (otherwise undes.)—		
Lisbon,	£54	
Extracts—		
Canada,	£255	
Toronto,	255	
Lisbon,	75	
Farina—		
Amsterdam,	10 t.	1 c.
Glue—		
Gothenburg,	£20	
Lead Acetate—		
Stockholm,	£6	
Lead Nitrate—		
Rotterdam,	£20	
Linseed Oil—		
Cape Town,		19 1/2 c.
Newfoundland,	1 t.	5 1/4
Bodo,		6 1/4
Hong Kong,	3	19 1/2
Shanghai,	1	18
Townsville,	3	12 1/4

Litharge—

Johannesburg,	£21	16s.
Magnesium Sulphate—		
Nova Scotia,	£51	
Manganese—		
Rotterdam,	£98	
Molasses—		
Rotterdam,	10 c.	
Oxalic Acid—		
Italy,	£35	
Stockholm,	24	
Paint—		
Brisbane,	£21	
St. John's, Nfld.,	£26	14s.
Townsville,	£100	
Painters' Colours—		
Brisbane,	£196	
Cape Town,	qty.	
Bangkok,	223	
Calcutta,	68	
Hiogo,	13	
Hong Kong,	196	
Paraffin Wax—		
Cape Town,	£76	
Santander,	30	
Amsterdam,	9 t.	11 c.
Danzig,	25	7
Skien,		
Bordeaux,	50	
Italy,	160	
Stockholm,	419	
	350	
Potash Salts—		
Mexico City,	£394	
Potassium Bichromate—		
U.S.A.,	£1,009	
Potassium Prussiate—		
Stockholm,	£24	
Salt—		
Brisbane,	348 t.	5 1/2 c.
Soap—		
E. London,	5 t.	
Newfoundland,	2	1/2 c.
Rangoon,	1	19 1/2
Soda Ash—		
Brisbane,	53 t.	14 c.
Starch—		
Rio de Janeiro,	£66	
Sulphuric Acid—		
Rangoon,	£362	
Tallow—		
Bilbao,	29 t.	9 1/4 c.
Treacle—		
Aalesund,	8 t.	12 c.
Christiania,	3	1 1/4
Stockholm,	58	5
Varnish—		
Brisbane,	£101	
Waste Salt—		
U.S.A.,	100 t.	
White Lead—		
Brisbane,	£47	
Huelva,	£24	12s.
Rockhampton,	£47	
Hong Kong,	85	
Shanghai,	108	

TYNE.

Week ending November 27th.

Alkali—		
Hamburg,	5 t.	15 c.
Rotterdam,	10	3
Amsterdam,	80	17
Alum Waste—		
Horsens,	10 t.	1 c.
Odense,	24	18
Ammonia—		
Hamburg,	1 t.	8 c.
Ammonium Chloride—		
Stockholm,	19 c.	
Ammonium Sulphate—		
San Francisco,	50 t.	11 c.
Antimony—		
Hamburg,	8 t.	
Gothenburg,	1	
Rotterdam,	1	
Amsterdam,	3	
Blanc Fixe—		
Gefle,	9 t.	11 c.
Bleaching Powder—		
Copenhagen,	5 t.	1 c.
Antwerp,	13	
Stockholm,	4	18
Rotterdam,	25	8
Horsens,	2	19
Gothenburg,	20	1
Amsterdam,	23	
Trieste,	19	

Bleaching Soda—

Amsterdam,	4 t.	2 c.
Caustic Soda—		
Copenhagen,	4 t.	7 c.
Stavanger,	1	3
Christiania,	4	7
Hamburg,	4	18
Gothenburg,	5	16
Stockholm,	10	14
Trieste,	10	3
Lamp Black—		
Gothenburg,	2 t.	
Litharge—		
Stockholm,	7 t.	7 c.
Hamburg,	8	5
Magnesia—		
Hamburg,	6 c.	
Antwerp,	1	
Rotterdam,	9	
Paint—		
Bergen,	6 c.	
Hamburg,	2 t.	10
Antwerp,	1	7
Gothenburg,	5	
Rotterdam,	1	8
Pyridine—		
Antwerp,	1 t.	5 c.
Soda—		
Antwerp,	10 t.	2 c.
Gothenburg,	10	5
Stockholm,	26	1
Gefle,	40	1
Rotterdam,	38	7
Amsterdam,	51	9
Soda Ash—		
Hamburg,	6 t.	16 c.
Sodium Silicate—		
Genoa,	10 t.	2 c.
Sodium Sulphate—		
Kallero,	500 t.	
Christiania,	25	
San Francisco,	11	2 c.
Gefle,	200	
Gothenburg,	15	8
Sulphur—		
Gothenburg,	35 t.	
Tallow—		
Genoa,	4 t.	11 c.

GOOLE.

Week ending November 24th.

Chemicals (otherwise undescribed)		
Amsterdam,	40 cks.	120 dms.
Hamburg,		
Coal Products (otherwise undes.)—		
Amsterdam,	49 cks.	2 dms.
Antwerp,	13	
Boulogne,	26	
Ghent,		1 cs.
Hamburg,		2
Rotterdam,	75	
Dyestuffs (otherwise undescribed)		
Ghent,	2 cks.	43 bgs.
Rotterdam,	4	5 cs.
Pitch—		
Antwerp,	929 t.	
Dunkirk,	222	
Salt Cake—		
Ghent,	700 t.	

GRIMSBY.

Week ending November 27th.

Chemicals (otherwise undescribed)		
Antwerp,	26 cks.	
Hamburg,		5 cs.
Rotterdam,		131 dms.
Coal Products (otherwise undes.)—		
Antwerp,	498 t.	
Dieppe,	55 cks.	
Colours—		
Hamburg,	1 ck.	10 cs.
Rotterdam,	2	4 kgs.
Dyestuffs (otherwise undescribed)		
Gothenburg,	2 cks.	
Glue—		
Dieppe,	1 ck.	
Gothenburg,	10 bgs.	
Pitch—		
Antwerp,	70 t.	
Varnish—		
Dieppe,	1 dm.	

PRICES CURRENT.

WEDNESDAY, DEC. 8TH, 1897.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary

Acids:—		£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/9	&	8/9
" Glacial	"			39/-
Arsenic S.G., 2000°	"	1	4	0
Fluoric	per lb.	0	0	3 1/2
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0	10
" (Cylinder), 30° Tw.	"	0	3	0
Nitric 80° Tw.	per lb.	0	0	1 1/2
Nitrous	"	0	0	1 1/2
Oxalic	nett	0	0	3 1/2
Phosphoric, 1750°	"	0	0	11 1/2
Picric	"	0	0	11
Sulphuric (fuming 50 %)	per ton	15	10	0
" (monohydrate)	"	5	10	0
" (Pyrites, 168°)	"	3	0	0
" " 150°	"	1	5	0
" (free from arsenic, 145°)	"	1	7	6
Sulphurous (solution) S.G. 1025	"	3	0	0
Tannic (pure)	per lb.	0	1	2 1/2
Tartaric	"	0	1	1 1/2
Arsenic, white powdered	nett per ton	21	10	0
Alum (loose lump)	"	4	10	0
Alumina Sulphate (pure)	"	4	2	6
Aluminoferrous	"	2	3	6
Aluminium (Ingot metal 98/99 3/4 %	nett	148	0	0
Ammonia, Anhydrous	per lb.	0	1	3
" " 880 = 28° B.	"	0	0	2 1/2
" " = 24° B.	"	0	0	1 1/2
" Carbonate	nett	0	0	3
" Muriate	per ton	18	0	0
" " (sal-ammoniac) 1st & and	per cwt.	33/-	&	31/-
" Nitrate	per ton	31	0	0
" Phosphate	per lb.	0	0	3 1/2
" Sulphate (grey) London	per ton	8	16	3
" " (grey) Hull	"	8	15	0
Aniline Oil (pure)	per lb.	0	0	7 1/2
Aniline Salt	"	0	0	6 1/2
Antimony	per ton	29	5	0
" (tartar emetic)	per lb.	0	0	8
" (golden sulphide)	"	0	0	10
Barium Chloride	per ton	6	15	0
" Carbonate (native)	"	3	10	0
" Sulphate (native levigated)	"	42/6	to	65/-
Bleaching Powder, 35 %	nett	6	2	6
" Liquor, 7 %	"	3	10	0
Bisulphide of Carbon	"	12	0	0
Chromium Acetate (crystal)	per lb.	0	0	6
Calcium Chloride	per ton	2	5	0
China Clay (at Runcorn) in bulk	"	15/-	to	30/-
Coal Tar Products and Dyes:—				
Alizarine (artificial) 20 %	nett per lb.	0	0	6 1/2
Magenta	"	0	3	9
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0	0	6
Benzol, 90°s	per gallon	0	1	9
" 50/90	"	0	1	11
Carbolic Acid (crude 60°)	per gallon	0	2	0
" (crystallised 40°)	per lb.	0	0	7
" (liquid 95/97 %)	per gallon	0	1	0
Creosote (ordinary)	"	0	0	2 1/2
" (filtered for Lucigen light)	"	0	0	3
Crude Naphtha 30 % @ 120° C.	"	0	0	9 1/2
Grease Oils, 22° Tw.	per ton	2	15	0
Pitch, f.o.b. Liverpool or Garston	"	1	0	0
Solvent Naphtha, 90 % at 160°	per gallon	0	1	8
Copper	per ton	48	8	9
" Sulphate	"	16	5	0
" Oxide (copper scales)	"	44	10	0
Glycerine (crude)	"	24	10	0
" (distilled S.G. 1250°)	"	40	0	0
Iodine	nett, per oz.	0	0	7 1/2
Iron Sulphate (copperas)	per ton	1	10	0
" Sulphide (antimony slag)	"	2	0	0
Lead (sheet)	"	13	17	6
" Litharge Flake (ex ship)	"	16	0	0
" Acetate (white ")	"	23	0	0
" " brown ")	"	17	0	0
" Carbonate (white lead) pure	"	17	0	0
" Nitrate	"	20	0	0
Lime, Acetate (brown) (ex ship)				
" " (grey) (ex ship)	per ton	5	12	6
Magnesium (ribbon and wire)	per oz.	0	2	3
" Chloride (ex ship)	per ton	2	10	0
" Carbonate	per cwt.	1	17	6
" Calcined Magnesia	per ton	8	0	0
" Sulphate (Epsom Salts)	per ton	2	15	0
Manganese, Sulphate	"	16	0	0
" Borate	per cwt.	2	10	0
" Ore, 70 %	per ton	3	10	0
Methylated Spirit, 61° O.P.	per gallon	0	1	8
Naphtha (Wood), Solvent	"	0	2	9
" " Miscible, 60° O.P.	"	0	3	7
Oils:—				
Cotton-seed	per ton	15	10	0
Linseed	"	16	0	0
Stearine	per ton	22	0	0
Phosphorus (yellow)	per lb.	0	2	0
" (red)	"	0	2	9
Potassium (metal)	per oz.	0	3	7
" Bichromate	nett per lb.	0	0	4 1/2
" Carbonate, 90 % (ex ship)	per ton	16	10	0
" Chlorate	per lb.	0	0	3 1/2
" Cyanide, 98 %	"	0	1	1
" Hydrate (Caustic Potash) 90 %	per ton	23	10	0
" " (Caustic Potash) 75/80 %	"	19	15	0
" Potash Hydrate Liquid 50 %	"	11	5	0
" Nitrate (refined)	per cwt.	1	1	6
" Permanganate	per cwt.	3	15	0
" Prussiate Yellow	per lb.	0	0	6 1/2
" Sulphate, 90 % (ex ship)	per ton	9	15	0
" Muriate, 80 % (do.)	"	8	10	0
Silver (metal)	per oz.	0	2	2 1/2
Sodium (metal)	per lb.	0	2	9
" Carb. (refined Soda-ash) 48 %	nett per ton	4	15	0
" " (Caustic Soda-ash) 48 %	"	4	5	0
" " (Carb. Soda-ash) 48 %	"	4	0	0
" " (Alkali) 58 %	"	3	17	0
" " (Soda Crystals)	"	2	5	0
" Acetate (ex-ship)	"	10	10	0
" Arseniate, 45 %	"	14	7	6
" Chlorate	per lb.	0	0	4 1/2
" Borate (Borax)	net, per ton	13	5	0
" Bichromate	per lb.	0	0	3 1/2
" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	"	8	10	0
" " (74 % Caustic Soda)	"	8	2	6
" " (70 % Caustic Soda)	"	7	5	0
" " (60 % Caustic Soda)	"	6	5	0
" " (pure liquor 90° Tw.)	"	3	12	6
" " 77/78 % powdered (99 % hydrate)	"	12	10	0
" Bicarbonate	"	6	10	0
" Hyposulphite	"	5	5	0
" Manganate, 25 %	"	15	0	0
" Nitrate (95 %) ex-ship Liverpool	per cwt.	0	7	7 1/2
" Nitrite, 98 %	per ton	26	10	0
" Phosphate	"	9	10	0
" Silicate (glass)	per ton	4	10	0
" " (liquid, 100° Tw.)	"	3	7	6
" Stannate, 40 %	per cwt.	3	2	9
" Sulphate (Salt-cake)	per ton	0	19	0
" " (Glauber's Salts)	"	1	7	6
" Sulphide	"	6	15	0
" Sulphite	"	5	0	0
Strontium Hydrate, 100 %	"	10	15	0
Sulphocyanide Ammonium, 95 %	per lb.	0	0	5 1/2
" Barium, 95 %	"	0	0	4
" Potassium	"	0	0	6 1/2
Sulphur (Flowers)	per ton	7	10	0
" (Roll Brimstone)	"	6	10	0
" Brimstone: Best Quality	"	4	10	0
Superphosphate of Lime (26 %)	"	2	5	0
Tallow (Beef)	"	18	10	0
Tin Crystals	per lb.	0	0	4 1/2
" English Ingots	per ton	65	0	0
Zinc (Spelter)	"	18	2	6
" Chloride (solution, 100° Tw.)	"	5	15	0
" Sulphate, Crystal	"	5	15	0

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Contents.

	PAGE		PAGE
Trelawny Die?	385	Germany and the American Oil	
Output in the Rand	386	Monopoly	391
Manchester Sewage Sludge		Trade Notes	391
.....	386	Tar and Ammonia Products	392
Patent List	387	Miscellaneous Chemical Market ..	392
Acts of Latest Complete Speci-		Report on Manure Material	392
cations	387	The Metal Markets	392
Hire College, Leeds	387	Liverpool Oil and Colour Market ..	393
Condition of the Ribble	388	Hull Paint, Oil, and Colour Report	393
Force and Science	388	West of Scotland Chemicals	393
Intelligence	389	Tyne Chemical Report	393
in Australia	389	New Companies	393
Absorbed Oxygen Test for		Imports	394
.....	389	Exports	397
ts of Companies	390	Prices Current	400

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Advertisements intended for insertion in the current week's issue should reach the office by Thursday morning at the latest.

SHALL TRELAWNY DIE?

LAST week we showed up the latest move of the S. O. Co. in trying to force their dangerous low-grade lamp oil on to the British public at the cost of over 300 lives per annum, to say nothing of the losses in property and such like.

Affairs stand thus at present. Sir F. Abel has "given himself away" by advocating safe oil for the War Office and unsafe oil for the people; Sir John Anthony Mundella has died, and with him the hopes of the low-flash party nearly died also; Sir John Fergusson, who, in the face of the protests of two authorities to one, suddenly revoked the 100° test in the old Petroleum Bill (to suit the ends of the S. O.) just before it was presented to the House, evidently does not care to toy with edged tools again; and so Dr. Duprè, the chemical adviser to the Home Office, has suddenly been brought out as a champion of low-flash oil.

Up to now, his attempts to advocate low-flash oil have either exposed his absolute ignorance of what he is talking about, or a perversion of scientific facts that is no credit to the members of the Institute of Chemistry, of which he is a Fellow.

In addition to this, he actually has the audacity to state that it is of no use for the public to try and get the flash point raised by law from 73° Abel to 100° Abel, for our legislators would not upset the trade by making the change. What trade? And who is Dr. Duprè to dictate as to what laws are to be changed and what left alone? It is not for him to settle, but for the Committee of Inquiry to recommend and Parliament to decide.

Let the Press and the public learn a lesson from the way the Petroleum Association "managed" Sir J. Fergusson, at the ninth hour, over the safety test advised by Abel, Attfield, and Letheby in 1868. Then the subject was one for experts only. The death roll compiled in the intervening years has made it a public matter.

Despite Dr. Duprè and his half-dozen influential supporters, such men as Prof. Ramsay, Lord Kelvin, and Sir H. E. Roscoe (backed by every open-minded chemist in Great Britain, Russia, and Germany), have given directly opposite testimony.

Let the public and our Parliamentary Committee lay to heart the fact that despite Germany being held up as a justification of low flash oil, the Imperial Government is prepared to "proceed ruthlessly against the abuses of the S. O. Co." The trade that Dr. Duprè would defend is an insult to the intelligence and integrity of our Parliamentary Committee, and a reproach to the country.

He seeks to bolster up an iniquitous monopoly conducted with a lawlessness that is notorious throughout the world.

An eminent representative of the American oil trade has allowed the daily press to state that they only seek to "meet the demand of English consumers." They do not. They only chuckle over burning them to death at a profit.

because the "powers that be" will not let our laws be adjusted in accordance with the progress of science and the calls of equity and public safety.

No one knows better than the American oil crew that Javan petroleum is supplanting their dangerous rubbish in the far East, Russia is fighting them in other markets, Galicia is driving them out of Central Europe, and that Great Britain is their last hope as an outlet for this dangerous oil. Russian oil has been *promised* with a flash point of 100° Abel (the standard of safety we have fought for this last five years) at *present prices*, and if the law is changed the refuse sent from America must be refined into decent oil. This is why the trade must not be so upset. If American oil were forbidden the country to-morrow the poor man would still get his oil in abundance at present prices, and *safe* into the bargain.

This is no vain boast, and the American crew knows it. Let the Press give voice to *facts* and not the inspired prevarications of millionaire magnates. There are plenty of honest advocates of high flash oil, but it would seem that Diogenes must have arrived at his final decision about men after looking among low flash advocates only.

We have nothing to gain, and, possibly, much to lose, by thus laying the bare facts before the public, and yet how hardly are our words credited.

Dr. Duprè's cry of not so upsetting the trade is preposterous. The Government have already imposed restrictive and burdensome laws on India-rubber makers, paper stainers and enamellers, dry cleaners, slag grinders, slag wool makers, boot factors, file cutters, glass polishers, cutlery grinders, cotton reel labellers, paint and white lead makers, ship-builders, galvanisers, pottery glazers, enamelled-ware makers, aerated bottle makers, lithographers, flour millers, and many other traders. What for? To protect the health of the workers; and yet they will not save 365 lives a year, and thousands of pounds worth of property, by protecting the public against this low-flash oil (73° Abel).

They dare not burn such oil in their lighthouses or barracks; Sir F. Abel will not let them. It must be 102° Abel test, or more. Yet oil which is inflammable at 73° Abel test—a common summer temperature—is safe enough for the people; the ignorant, careless, and reckless poor of Great Britain. This is what we want rectified, and the truth shall not be perverted and Trelawny executed at the last moment, this time. If the attempt is successful, every Medical Officer of Health, every open-minded chemist, and nearly every coroner in the country will know the reason why, to say nothing of the public.

SOCIETY OF DYERS AND COLOURISTS.—A meeting of the Manchester section of this Society was held on Saturday last, at the rooms of the Chemical Club, Victoria Hotel. In the absence of the Chairman (Mr. W. H. Pennington), Mr. Green presided. Mr. R. J. Flintoff read a paper prepared by himself and Mr. E. Ormerod, in which he described some experiments on the resist action of calcium carbonate on aniline black. In the course of discussion Dr. Knecht said Mr. Flintoff had brought before the meeting some results which were of considerable theoretical value. Mr. J. Allan read a note on oxycellulose, and Dr. Knecht also contributed some notes on an interesting formation of aniline black. Brief discussions followed the reading of these communications. Dr. Knecht exhibited an interesting collection of Japanese stencil plates for printing, and also a model of a Japanese printing machine. The plates, he explained, were cut from a peculiar kind of paper, which was at present under examination at the Manchester Technical School by Mr. Hübner, with a view to determine the material from which the paper was made, and how it was made. Extremely careful and exact work in printing was, he said, carried out by the Japanese, entirely by hand, principally in silks and delaines, and they were able to compete in those processes with Europeans, and to produce some very beautiful patterns. In the specimens which he produced, aniline dyes were principally used. Votes of thanks were passed to the readers of papers and to the Chairman.

GOLD OUTPUT IN THE RAND.

THE output from the Rand district during November, as by the Chamber of Mines, of the South African Republic amounts to 297,124 ozs., and shows an increase of 22,949 compared with the previous total, and an increase of 96,011 as compared with the corresponding month of 1896. The following table gives the monthly returns since the beginning of 1894:—

	1894. oz.	1895. oz.	1896. oz.	1897. oz.
January	149,814	177,463	148,178	209,832
February ...	151,870	169,295	167,018	211,000
March	165,372	184,945	173,952	232,067
April	168,745	186,323	176,707	235,698
May	169,773	194,580	195,008	248,305
June	168,162	200,941	193,640	251,529
July	167,953	199,453	203,873	242,479
August	174,977	203,573	213,418	259,603
September ..	176,707	194,764	202,561	262,150
October	173,378	192,652	199,889	274,175
November ..	175,304	195,218	201,113	297,124
December ..	182,104	178,428	206,517	—

Total .. 2,024,159 2,277,635 2,281,874 2,723,962

THE MANCHESTER SEWAGE SLUDGE STEAMER

AT the close of the morning sitting on Monday, at which routine business was transacted, the Rivers Committee proceeded to the sewage works at Davyhulme. The chief object of the visit to inspect the new sludge steamer (which only arrived from Barrow-in-Furness on Saturday) and to test the working of the sludge tank latter have just been erected, and form the reservoirs into which sludge is to be pumped from the works while the sludge steamer is absent at sea. The sludge resulting from precipitation has been treated in large filter presses. After the moisture has been extracted a solid cake remains, and it was once thought that this could be readily purchased by farmers and others on account of its manure properties. Experience has taught otherwise. Manure is so cheap that it scarcely pays for the cost of carriage and cartage, a consequence there are at the present moment thousands of this pressed sludge lying in the works at Davyhulme. The sludge is now to be treated in the following manner. After the settled effluent has been removed from the top of the sludge, valves are opened at the bottom of the settling tanks, through which the sludge falls by gravitation into two air chambers. These work automatically in the one filling while the other is emptying. As soon as one valve is released which exposes the cap of the chamber to an air pressure of from thirty to forty pounds per square foot, and the sludge is forced along the pipes to the reservoirs on the banks of the River. Here the steamer is waiting to receive it, and carries it out to sea.

The steamer is named the *Joseph Thompson*, in honour of the chairman of the committee, and has only just left the hand-builders, Messrs. Vicars, Son, and Maxim, of Barrow-in-Furness, 256 feet over all, with a beam of 38 feet, and has a registered tonnage of 586 tons. The engines have a horse-power of 1,030 and is expected that she will steam at the rate of over 10 knots an hour, and carries a crew of 18, inclusive of officers and engineers, and the complement of the men are admirable in every respect. The capacity of the cargo amounts to 1,080 tons, and arrangements are being whereby she will make three voyages a week. Ten of these are already at work under the London County Council, and the others all been built at Messrs. Vicars' works and on the same line plan for loading the vessel is exceedingly simple. Just in front of the "bridge," a square box is situated. From this receptacle for sluice gates open into as many chambers. As these fill, the gates close, and the vessel proceeds down the Canal and Mersey to some 20 miles below the Liverpool landing stage, where she discharges her cargo into the sea. To effect this object, four valves are opened at the bottom of the boat, and the sludge pours through them into the sea. To prevent the pressure of the sea water from preventing the fall of the sludge, four air chambers have been built below the sludge chambers, and by their natural buoyancy the sludge is continually kept above sea-water line. As the boat lightens, the air chambers below the sludge continually raises her higher and higher in the water, until the last drop of liquid mud drains off, and she returns on her homeward voyage. The members of the Committee were much interested while these particulars were being given by the City Surveyor, Mr. T. de Courcy Meade. During the meeting it was resolved by the Committee that a new shunting engine works should be named the *M'Dougall*, in honour of Mr. A. M'Dougall, the late chairman of the Purifying Works Sub-committee.

The Patent List.

List is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of E. Davis and Alfred R. Davis, who report professionally the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

ducers. A. J. Evans. 28,106. Nov. 29.
g Large Crystals. J. Bock. 28,113. Nov. 29.
Compounds. J. C. Hamilton. 28,152. Nov. 30.
ng Oil from Seeds. A. Euston. 28,206. Nov. 30.
ytical Treatment of Precious Metals. H. Reicken. 28,212. Nov. 30.
tting Calcium. H. L. Hartenstein. 28,226. Nov. 30.
and Apparatus for Manufacturing Water Glass. L. Crote.
5. Dec. 1.
ducers. C. Hamfrey. 28,367. Dec. 1.
inguishing Apparatus. J. O. O'Brien. 28,373. Dec. 1.
and Exhausting Apparatus. F. W. Lancaster. 28,418. Dec. 2.
ing Fibres. K. T. Sutherland. 28,429. Dec. 2.
nating Ores with Lead. E. Govett. 28,440. Dec. 2.
ural Sprayer. G. F. Strawson. 28,451. Dec. 2.
ture of Fuel. T. H. Gittins and J. Marshall. 28,477. Dec. 2.
roof Paint. H. Loesner. 28,484. Dec. 2.
le Fibres. C. Wetherwax. 28,491. Dec. 2.
ens. W. E. Kochs. 28,504. Dec. 3.
g Saccharine Juices. J. J. Hignette. 28,539. Dec. 3.
stillling Retorts. A. Gordon. 28,653. Dec. 4.
Ores. J. de Faubert Maunder. 28,723. Dec. 4.

TRACTS OF LATEST COMPLETE SPECIFICATIONS.

abstracts are specially prepared for the Chemical Trade Journal, RIGHTS of publication are RESERVED. This is the earliest of abstracts of Chemical and allied patents accessible to the

ments in Coke Ovens. G. Hilgenstock, Dalhausen on Ruhr, Ger.
Eng. Pat. 27,120. Sept. 27, 1897.

is a modification of the beehive type of oven so as to gain greater surface at the base, and to prevent the decomposition of the flucis. The ovens are therefore made with broad flat bases and eight. There are six drawings, showing two separate arrangements of flues in the base of the ovens, which is heated by burner opening into the flues. Openings are made in the arches of the ovens to facilitate the heating, these openings being connected by the heating chambers in the base of the oven.

ments in the Construction of Boilers, and in Smoke-Consuming spaces therefor. H. H. Lake, 45, Southampton Buildings, Chancery-lane, London, W.C. (communicated by E. B. Parkhurst, 19, Green-street, Boston, Massachusetts, U.S.A.) Eng. Pat. 29,942. Dec. 29, 1896.

patent describes, with full details, a tubular boiler of the Wilcox type. As a boiler for hot water heating systems it has many advantages, but there is scarcely a reference to the preventing qualities. Among other advantages, stress is laid on the use of a hot crown sheet on to which the water may suddenly rise and cause an explosion. There are eight drawings illustrative of the patent.

ments in Process of and Apparatus for Distilling Ammonia. J. Krebs, 106, Franklin-street, Wilmington, U.S.A. Eng. Pat. 17,313. Dec. 22, 1897.

apparatus provides for the preparation of anhydrous ammonia from the loss of ammonia in the residues. There are two distillations, the first is carried on continuously. The concentrated distillate is treated in the second distillation leaves a residue charged with a small amount of ammonia. These residues pass back to the steam boiler so that the ammonia comes forward again. The first still is in two parts. The bottom half is much the same as an ordinary column still, the upper half is a rectifier constructed much on the same principle as the super-heaters attached to ammonia stills. The plant can be worked for high or low pressures, and owing to the continuous working the process is rather complicated as regards the travel of the liquors. A lengthy description, though the process itself is not very complicated. For full particulars the specification and the four drawings should be consulted.

ed Process for Obtaining Barium Carbonate from Native Sulphate of Barium. H. H. Lake, 45 Southampton Buildings, Chancery-lane, London, W.C. (communicated by J. S. Levi and Co., via Pietro Micca 15, Turin). Eng. Pat. 17,248. Jan. 16, 1897.

native baryta is roasted in a reverberatory furnace with carbon, manganese slag, etc., to form the sulphide. The mass is leached

with water and the sulphhydrate crystallised out as pure as possible. The sulphhydrate is then treated a solution of sodium carbonate or other suitable carbonated alkali, and the insoluble carbonate of barium separated by filtration. The sulphide of soda is recovered as a by-product, and a low-grade carbonate of barium is obtained from the sulphhydrate mother liquors by precipitation as above.

An Improved Method of Improving or Oxidising Alcoholic Beverages. J. D. Möller, Plantage Rosengarten, Wedel i/H., Germany. Eng. Pat. 23,249. Oct. 9, 1897.

The addition of half a litre of ordinary 10 per cent. hydrogen peroxide to every 100 litres of brandy, etc., is suggested for accelerating the ageing of such liquors. The addition can be made either in bottle or cask.

YORKSHIRE COLLEGE, LEEDS.

LEATHER DEPARTMENT.

THE session which has just ended (1896-97), is the sixth since the foundation of the department, and is marked by the establishment of a Permanent Chair of Leather Industries at the College, the Lecturer on Leather Industries having been raised to the rank of a professor. Mr. M. C. Lamb, who was previously Assistant in the Department, has also been made a Demonstrator.

The erection of a suitable building and the provision of an adequate endowment for the department is still urgently required, and until these objects are accomplished but little expansion in its work can be attempted since the laboratory has only proper accommodation for ten students, and this number has on several occasions been exceeded; and even this accommodation extends little beyond that required for ordinary chemical work, so that any attempt to experiment on the actual process of leather manufacture is made under almost insuperable difficulties. Under these circumstances, and exposed to the growing competition of other tanning schools, it is satisfactory that the number of students has been fairly maintained, every place in the laboratory being at present occupied.

The teaching during the Session calls for little remark, having been carried on on the same lines as in previous years, but arrangements have been made to give an additional course of 60 lectures on the practical methods of leather manufacture, so as to allow the whole of the existing course of 90 lectures to be devoted to the principles of leather manufacture, which has recently been accepted by the Victoria University as one of the subjects in technological chemistry which may be taken for the honours B.Sc. This brings up the total number of day lectures to five per week. A new course of laboratory instruction has also been drawn up, in which an effort has been made to include such practical experiments on the production of leather as the appliances of the laboratory render possible.

During the session some research work has been done, and many experiments have been made, principally bearing on the subject of chrome tannage, and on the laboratory methods which are included in a leather industries' laboratory book, which has been prepared by the professor, and which is now ready for publication. Papers have also been published by him on "Some Methods of Analysis of Chrome Salts," in the *Journal of the Society of Chemical Industry*, and "On a Cheap Method of Chrome Tannage," in the *Leather Trades Circular*; and a "Report on the Methods of Analysis of Tanning Materials," was prepared by him for the recently formed International Association of Leather Trade Chemists, which formed the basis of its deliberations at its first meeting held in London in September. It should be eminently satisfactory to the Yorkshire College that a gathering of English and Continental chemists so thoroughly representative of the branch should have been called together in London by the joint influence of the two English tanning schools, and that it should have unanimously adopted a standard method for the analysis of tanning materials which differs in no important particular from that employed for some years past at the Yorkshire College. There can be no doubt that the agreement thus arrived at will prove of great advantage to the tanning trade.

During the session, the following donations have been received, viz: ½ cwt. sulphide of sodium from the United Alkali Company, Limited, and 1 cwt. canaigre root from Messrs Fisher, King & Co., London.

The number of individual students attending the day classes during the session was 12, which was slightly smaller than that of the previous year, but quite as many as the laboratory could comfortably accommodate. In the evening classes, which included lectures on "Recent Processes of Leather Manufacture," with accompanying laboratory practice, good work was done, but the total number of students was only 11, and of these but few belonged strictly to the working class. It is quite evident that there is little or no demand for this class of instruction among the operative tanners and curriers, and the evening classes in this, as in some other departments, must be financially very unprofitable to the College, though on other grounds their continuance may be desirable.

THE CONDITION OF THE RIBBLE.

REPORT OF THE COMMISSIONERS.

AT a meeting of the Ribble Committee held at the Town Hall, Preston, recently, the report of the Commissioners to the Board of Trade on the application of the Corporation of Preston for permission to deposit materials dredged from the River Ribble upon the beach and shore below high-water mark on the south side of the river at Longton Marsh was presented. It will be remembered that the matter was inquired into by a Commission composed of Sir John Wolfe Barry (president), Vice Admiral Sir George Nares, and Sir Charles Hartley.

The Commissioners state that on July 21 they visited the Ribble and inspected the navigation works of the Corporation from about twelve miles below Preston to the dock at that place. Mr. Fowler attended, and explained what had been done since the Ribble Navigation Commission made their final report in 1891, and also the works proposed to be carried out. On the same date they inspected the new sand-pump dredger (the Forshaw) bought by the Corporation. As a result of their inspection of the works in the river, they find that the north training wall below the Naze, the construction of which was recommended in their interim report of the 5th October, 1889, was practically completed at the end of 1893, and that the north training wall below Lytham, authorised by the Ribble Act of 1896, is now being constructed, and about one mile of it has been finished. They were also informed that the Corporation had all the necessary funds for carrying out all the training walls authorised by that Act on both the north and south sides of the navigable channel. They had ascertained that from 1891-2 down to May last, when the new sand-pump dredger was purchased, practically no dredging was done, owing to want of funds, except over a length of three-quarters of a mile below the dock entrance, and, consequently, the increased depths anticipated by the Commissioners in their report of 1891, as being due to the combination of training walls with systematic and persistent dredging on a larger scale, have not been obtained. Nevertheless, the result of the walls erected since their report of 1891, so far as they have been executed, has been distinctly satisfactory, and they have no doubt that, with a systematic use of the sand-pump dredger, increased depths in the river will be realised. All the facts brought under their notice indicated the extreme importance of utilising to the utmost the tidal scour of the river and estuary, as, indeed, was clearly pointed out in their report of 1891. The Commissioners then deal with the present proposals of the Corporation. Permission is desired to deposit material dredged from the river on about 220 acres of shore, not grassed over at present, lying between the Ribble and Astland, and bring this area to the level of high water of spring tides. It is further proposed, by the erection of a bank, the top of which would be 11 feet above high water of ordinary springs, to enclose a further area of 580 acres of grass land now covered by water during extreme high tides and floods, lying behind or landward of the area upon which the material is to be deposited. The suggestion is, therefore, to withdraw from the tidal capacity of the estuary a total area of about 805 acres. The material that would be deposited on the area referred to above—namely, 1,400,000 cubic yards—could be placed there more economically and expeditiously than elsewhere, urged Mr. Fowler, who estimated that the saving that would be effected while the material was being so deposited would amount to about 1d. per cubic yard. The second object to be gained was the reclamation of 805 acres of land fit for cultivation. The Commissioners point to the expense of the methods of pumping the material proposed, and admitting that 1d. per cubic yard might be saved—which they did not endorse—the advantage thus gained would amount roughly to £5,800. As regards the second object to be gained by the deposit—namely, the reclamation—they had no figures on which to form an estimate of the value of the land enclosed. After reviewing the evidence, the Commissioners state that on the question of financial advantage they are of opinion that if additional dredging be entailed upon the Corporation by reason of the proposed abstraction of tidal water, as they apprehend will be the case, the increase in the future annual cost of maintaining the navigable waterway would far outweigh any possible gain. But apart from financial considerations, they think that the permitting of land reclamation in the Ribble estuary is distinctly wrong, and would be a repetition of former errors. On this point they refer to portions of their interim report and their final report, and in conclusion state that if the reclamation now proposed be authorised, it is evident to them that further applications would be made for permission to embank adjoining land, which land is so similar to that now proposed to be embanked that if permission is granted in one case, other similar proposals may be expected to follow as a matter of course. Looking to all the circumstances of the case, they recommend the Board of Trade not to consent to the application of the Corporation of Preston for permission to deposit materials dredged from the river Ribble upon the beach and shore below high water mark on the south side of that river at Longton Marsh.

COMMERCE AND SCIENCE.

THE monthly dinner of the Article Club was held last week at the Hotel Cecil, when the subject of debate was "Science in its Relations to Commerce." Mr. F. H. Bowman, D.Sc., chairman of the Chloride Electrical Storage Syndicate, presided, and amongst those present were Lord Suffield, the Hon. W. P. Reeves (Agent-General for New Zealand), Admiral P. H. Colomb, Admiral Beaumont, Mr. W. Tudor Howell, M.P.; Professor Atfield, Professor Clowes, Professor Corfield, Professor Armstrong, Professor Ramsay, Professor Ayrton, Professor Perry, Professor Lloyd, Mr. Hiram S. Maxim, Dr. A. A. Common, F.R.S.; Messrs. W. Mugliston (superintendent of the line, Midland Railway), J. W. Swan, Duncan Matheson, John Cutler, Q.C.; John Dixon (South-Western Railway), Colonel Gordon, Colonel M'Lean, Captain Wemyss, Dr. Harvey Atfield, Rev. O. P. Wadell-Yerburgh, A. Seymour-Jones (president, Wrexham Chamber of Commerce), Arthur Greenwood, and Lesser Columbus (Hon. Secretary).

The Chairman, in introducing the subject of debate, sketched the history of science in relation to industrial pursuits, pointing out how much commerce, industry, and the arts had profited from the advances particularly of electricity, chemistry, and engineering. Of science, however, this country had no monopoly; it bled every nation that engaged in it. Those nations that could take the greatest advantage of the scientific researches of the age would be the nations of the future. He believed that this country was awakening to that fact, and he had little doubt that in the future we should make still greater advances. Science, however, expected some reward for its efforts, and in this connection he remarked that our patent laws were devised rather to hinder the inventor than to give him the advantage of his discoveries. There were vast industries in this country to-day that would be all the better for a change in those laws. The Government should give a larger endowment to pure scientific research. If only they would take full advantage of all the knowledge which the gentlemen around the table could bring them he believed they should be able to hand down to their children, not only unimpaired, but augmented, the vast heritage of commerce the country had received from the past.

The Hon. W. P. Reeves, Agent-General for New Zealand, in a really clever piece of levity, suggested among other things that the Americans should bring out a patent ensuring that in future all newspapers should tell the truth, and that parliamentary life should be robbed of its terrors by an instrument which would prevent us hearing the talk of people who were talking in the same room. Speaking in a more serious vein, however, Mr. Reeves quite agreed that science was knitting the Empire more closely together. He could remember the time when it took between 90 and 100 days to travel from London to New Zealand; now it was 32 days, and in a few months it would be 30 days. If the Empire League wanted to do the right thing they would get up a mighty endowment for scientific research, and offer a few hundred thousand pounds to the scientific men who would reduce the time taken in getting from England to the Antipodes by, say one-half.

Mr. Hiram S. Maxim, in the course of some remarks, incidentally remarked that about the best machine for introducing commerce into the odd corners of the world was the Maxim gun. A missionary once told him that he had had great trouble in introducing religion among savage races, and suggested that perhaps a Maxim gun would be a good thing to spread religion as well as commerce. He replied:—"My friend, you are quite right; get a Maxim gun, and the savages will never find any fault with your religion; they will take it *holus bolus*."

Mr. Tudor Howell, M.P., observed that if this country was to compete with other countries in the field of commerce they must have knowledge not only among the great captains of industry but also among the workmen. In this country we did not give to the inventor sufficient protection, and this was a defect which a club like this could remedy—the most influential commercial club that existed anywhere in the world.

Professor Ayrton, representing electrical science, thought that capitalists might aid science, they having been aided by science. The great development he looked forward to in the early part of next century was the burning of coal at the pit's mouth, sending the energy thus obtained by means of overhead or underground wires to the big towns, and thence transforming it into mechanical energy for driving engines and mechanical energy for cooking and warming our buildings.

Admiral P. H. Colomb thought the greatest block to science which now exists was the want of higher teaching in regard to economics. Artisans seemed to imagine that wages flow like the falls of Niagara, and that it was a question merely for them who was to get his pannikin in to get the largest supply of those wages. Science would fail very much in its duty if it could not impress on the majority of the artisan class the knowledge that the cost of production determined the amount which was paid in wages, and that any increase, however small, in the cost of production was an ultimate block to wages. Prof. Clowes and others also spoke.

Legal Intelligence.

HIGH COURT OF JUSTICE.

CHANCERY DIVISION.

(Before Mr. Justice Romer).

WEBB v. HALLAM AND SON, LIMITED.

case was a motion for an injunction against defendants for infringement of Webb's patent acid concentrating process. Mr. T. Q.C., was for the plaintiff and Mr. Clare, Q.C., for the defendant.

Thomas Terrell: My Lord, in the case of Webb v. Hallam and Son, I have to move for an injunction to restrain infringement of patent 2,343 of 1891, for an improved apparatus for concentrating sulphuric acid. My friend, Mr. Clare, is against me. We last week that we had come to an understanding to let the matter go to the trial, my friend undertaking to keep an account, and that I misunderstood my friend, and that he does not wish to keep an account. Why he should not I cannot think, because it is so simple to keep.

Justice Romer: Why not? it is the usual thing.

Mr. Terrell: The account that we should have to keep, to be of any use, would be a very complicated one, and one we should not wish to keep in ordinary circumstances, but the patent is a patent for the apparatus for concentrating sulphuric acid. It is not suggested that the plaintiff is manufacturing sulphuric acid; he is really a user of the apparatus. Therefore, if my friend is going to let the matter go to the trial, the measure of damages will be the loss he has sustained, and will not have any relation whatever to the amount of acid that he has been rectifying. If my friend is going on the ground that for profits, then it may be that the measure of damages may be the amount of sulphuric acid which we have concentrated by the process, but what we have got by using this particular form of process.

In order to keep an account which will be worth while in regard to that, we should have to keep an account of the costs and things we do not keep account of.

Thomas Terrell: I do not want that.

Justice Romer: I do not suggest that at all. That is not the question. We should ask to be kept.

Thomas Terrell: I only want an account of the number of tons of acid concentrated in this apparatus; that is all.

Justice Romer: Yes, that is all.

Mr. Terrell: My instructions are to resist this motion. Our case is supported by affidavits it is perfectly clear that the patent is absolutely infringed, it is not an old patent, or a patent that has ever been fought.

Justice Romer: If the patent succeeds, I do not know anything about it if it turns out at the trial that you fail, when the account is given, a presumption will be made against you.

Mr. Terrell: If the patent succeeds, the amount of sulphuric acid that has been concentrated in this apparatus cannot possibly have anything to do with the question of damages.

Justice Romer: I only say that I should have thought you might have asked for an Order "The defendant refusing to keep an account."

Thomas Terrell: I do not know why he should not keep an account of the tons of sulphuric acid; it is so extremely suitable.

Justice Romer: It will be very much the worse for him if he loses the case.

Mr. Terrell: I am quite prepared to run that risk.

Thomas Terrell: This patent has been supported in Germany for many years.

Justice Romer: Well, theoretically, I am bound to go into it and look at the patents and see whether there is a presumption that you need at the trial and all that. Would it not be better for you to have said to take one of two courses, let it stand to the plaintiff's Order, and you may put in the Order if you prefer it that the defendant refused to keep an account, costs costs in the action.

Mr. Terrell: I am quite content.

Thomas Terrell: Will your Lordship allow me one moment to see my client?

Justice Romer: Yes, it is with a view of saving public time.

Thomas Terrell consulted his client.]

Thomas Terrell: Very well, my Lord, I will do that.

Justice Romer: Which will you take?

Thomas Terrell: That the motion stands to the trial, costs costs in, or costs reserved to the trial?

Justice Romer: Simply stand to the trial.

Thomas Terrell: Yes, simply stand to the trial, the defendants keep an account.

Justice Romer: Yes.

GYPSUM IN AUSTRALIA.

IN connection with the Ludlow Gold Mines, Limited, considerable deposits of gypsum have been found. At the statutory meeting of the Company recently, the Chairman (Dr. J. H. Trouncer), in referring to the new manager (Mr. Attwater) said that in addition to his experience in gold mining, Mr. Attwater was an expert in the treatment of gypsum, and he assured the board that, provided there was a sufficient demand for plaster of paris and lime in the neighbourhood and the colony, and also that there was a sufficient quantity of the gypsum itself on the property, he would be able to turn it to profitable account inside of two months of his arrival. The new manager would be requested to take regular bulk crushings of the ore in order to test the lode and the reefs at intervals; in fact, he would be instructed to turn everything he could into hard cash for the benefit of the company. Pending the arrival of the new manager in the colony, they had retained the services of the vendors' present manager, Mr. Colin Hayton. With regard to the machinery, they did not propose to order any until the new manager had formed an opinion as to the most serviceable machinery for the ore which had to be treated. Much money had been wasted in Western Australia in the erection of machinery which was unsuited to the ore to be treated.

Mr. Jacoby asked if it was proposed to erect a plant to work the gypsum at once.

The Chairman, in reply, said the gentleman who was all but appointed manager attached great importance to the large body of gypsum which was reported to exist on the property. In the course of an interview he stated that he could not tell how it would turn out, but if it was at all equal to what was represented, he was prepared to guarantee to make it pay to work.

THE ABSORBED OXYGEN TEST FOR WATER.

By FELIX MARBOUTIN AND MICHEL FRANCK.

WE have estimated the amount of organic matter in solution in various waters around Paris by means of two different processes; the Albert-Lévy method as used in France, and the Forchhammer method used in England. These two methods of estimation give very different results for the same water.

M.GRMS. OF OXYGEN ABSORBED TO OXIDISE THE ORGANIC MATTER (PER LITRE).

	Albert-Lévy method.	Forchhammer method, modified by Sir E. Frankland.
Seine at Choisy-le-Roi	2'92	1'53
" Ivry	3'00	1'66
" Austerlitz	2'60	1'27
" Argenteuil	2'43	1'26
Marne at Neuilly	1'22	0'69
" Saint-Maur	1'13	0'56
Ourcq at the Vilette basin	1'45	0'82
Ayre reservoir, Rue Villejust	0'24	0'08
Drain at Epinay (Gennevilliers)	1'13	0'39
Drain at Gresillons (Gennevilliers)	1'05	0'36
Drain at Garenne (Achères)	0'65	0'24

This table shows that, for river waters, the French method gives figures double those of the English method; while for certain springs and surface drainage waters the numbers are tripled.

In view of this fact, it may be interesting to compare the tables as arranged in England and France for the classification of waters by the estimation of organic matter.

M.GRMS. OF OXYGEN ABSORBED TO OXIDISE THE ORGANIC MATTER (PER LITRE).

Nature of the water.	M.grms.	ENGLAND.	
		Sir E. Frankland by the Forchhammer process.	
		Surface waters from uncultivated land.	Surface waters from other than uncultivated land.
Very pure	Less than 1'0	Less than 1'0	Less than 0'5
Medium purity	1'0 to 2'0	1'0 to 3'0	0'5 to 1'5
Suspicious	3'0 to 4'0	3'0 to 4'0	1'5 to 2'0
Impure	More than 4'0	More than 4'0	More than 2'0

Thus it appears that river waters are classified in the same category both in France and England, in spite of the difference in the results; but such is not always the case with springs and surface drainage water. In France, the Commission on Hygiene did not think it worth while to make any difference between surface waters from uncultivated or cultivated sources, and it is noticeable that they are more strict than in England for springs and surface drainage waters.—*Bull. Soc. Chim.*

Reports of Companies.

THE GERONA COPPER CO., LTD.

THE first (statutory) general meeting of this Company was held last month. The Chairman (Mr. Henry Benham) said:—"The company was registered on the 26th July, 1897, and the contract for the purchase of the property was entered into as soon thereafter as possible. The prospectus was not issued to the public, but shares were taken up privately by the directors and their friends. Our colleague, Mr. Bennett, proceeded to Barcelona where the lease was prepared, examined and approved by our notary and duly executed. The lease has now been sent to Madrid to have the Government duty assessed. As soon as this is done it will be registered. Meanwhile some work has been done on the property. Mr. Bennett inspected the works, and has laid down the lines on which development should proceed. He estimates that within three months the company should be in a position to ship ore. The directors' attention has hitherto been chiefly directed to the execution of the lease, but it is their intention now to proceed as quickly as possible with the development at the mine. As this meeting is purely formal, and only called to comply with the Companies' Acts, I will not detain you longer, but will merely ask our consulting engineer (Mr. Bennett) to give you his views." Mr. Bennett said: "When I first saw this property in May last I was very favourably impressed with its prospects, and I decided to back my opinion by putting £2,000 into the undertaking. I have other mines in Spain and know the country well. A few weeks ago I went to Barcelona and completed on your behalf the necessary formalities with regard to the lease. With regard to the mines I have already reported to the Board on the manner in which work should be continued, and an expenditure of, in my opinion, £800. to £1,000. will be sufficient to enable the company to commence the shipment of ore, and I feel certain that profits will accrue from the moment of the first shipment. I have already communicated with a competent man to take charge of the works, and you may be sure that, seeing the considerable amount of money I have invested, I shall look to the management, and I am convinced of the value of your property. In conclusion, I may say that I am glad to see here, as one of our shareholders, Mr. G. G. Blackwell, sen., of Liverpool, who thirty years ago was one of the first to recognise the immense wealth of the Rio Tinto property." After a vote of thanks to the chairman the proceedings terminated.

LAGUNAS NITRATE CO., LTD.

The annual general meeting was held last week at the Cannon-street Hotel, Mr. Henry W. Lowe presiding. In moving the adoption of the report the chairman stated, with regard to the item of additional works, £22,123., on the credit side of the balance-sheet, that it was brought forward from their former balance-sheet, being an item which formed one of the subjects of dispute between them and their opponents in the litigation that was pending. In reference to the item of capital stocks, although the inventory values they had received from the oficina amounted to the sum placed against it, they had thought it prudent to write £2,000. off it in anticipation of any depreciation that might occur. The working of the hotel had caused a loss of £1,687. That building was erected for the convenience of their employees, and, although there had been a loss on its working, they thought they had gained a certain advantage for the expenditure by keeping their men together and getting better work from them. As to the item of "stocks of nitrate in Europe at market price," it consisted of what remained on hand of what they had termed the former consignments. They took every means possible to dispose of these consignments at the earliest date practicable, and they succeeded in getting what by comparison was a very high price for the greater portion of them; but they found that they had a very large quantity of nitrate at Hamburg, which was overstocked with the article at the time. Eventually they were left with a stock of nearly 3,000 tons. Their nitrate in Chile, on the other hand, although credited in the balance-sheet at cost price only, had since been disposed of at a very considerable profit. In regard to the suspense account, on the debit side of the balance-sheet, they had claims against them amounting to £13,009., of which a considerable portion represented the sum paid into Court against Messrs. Lockett's claim; and, on the other hand, they had a claim against certain people which they had taken credit for on the other side of the balance-sheet. The gross profit on the trading for the year had been nearly £48,000., and he could not help thinking, in view of the very low prices which had ruled during the period covered by the balance-sheet, that that result must be considered exceedingly satisfactory. From this balance they had written liberally off everything which they had thought ought to be written down, and, although they had to add to this their expenses in London—which he claimed were as moderate as those of any company of equal magnitude—they were left with a net profit for the year of £24,200. That was the net sum in hand in addition to the amount brought for-

ward, and therefore they had an available balance of £42,800. There was no doubt that the two essential points which all nitrate companies must bear in mind were the cost of production and realisation at the best possible prices. In reviewing the prices they had obtained for their produce he had been glad to find that in every case it was far above the results shown by other companies, measured by the current quotations of the day. Their oficina and the whole of the maquina had been kept in a thorough state of order, and all the repairs necessary during the year had been debited to revenue. The

COMBINATION WAS AT AN END,

and very great uncertainty prevailed in the nitrate trade as to the future of the business. This would involve great caution on the part of the directors regarding the conduct of the business, but they fully recognised the difficulties of the position. There was no limit now, as there was before, to the amount they could produce; but it was not their intention or desire to increase their output.

A POSSIBLE RE-COMBINATION.

He could not help thinking that the existing state of things in regard to this question could not last for any long time, and he hoped that the combined intelligence of those who were interested would result in devising some lasting scheme which would enable those concerned to obtain a fair remuneration for the enormous capital invested in the industry. With reference to the lawsuit which was now going on, the matter had been fully explained at former meetings, and in no sense had any laxity occurred in prosecuting the matter. The work it involved was, however, enormous. Two of the directors had been to Chile to procure evidence necessary to substantiate the company's claims and on their return they expected that the case would come on for hearing early in January. So far as he himself was concerned, he felt very confident of the result. Mr. A. Porlitz seconded the motion. In reply to Mr. H. C. Richards, M.P., the chairman stated that the directors took the full fees permitted by the articles of association, and they felt that they were entitled to do so by the work thrown upon them. He must be excused for not replying to the question regarding the amount paid to the two directors for going to Chile; it would be part of the legal expenses. It had been absolutely necessary for them to go to Chile. The reason they had had a special examiner in Chile instead of the British Consul was simply because they had wanted to economise in every way, and the Consul was not always available. Moreover, with every respect for British Consuls abroad, he had on many occasions found that they were not equal to dealing with a very important matter like that in question, where evidence had to be taken and every item carefully and legally watched. The loss on former consignments embraced the whole of the consignments shipped by the former board. The hotel was closed on their discovering the loss referred to, and it would not be reopened until they were assured that it could be worked at a profit. The note at the foot of the accounts was added after the auditors' signature, and the board were legally advised that the note ought to be in the balance sheet. The price of nitrate last June was not very dissimilar to that ruling at present; it had improved in the interval, if anything. The motion was unanimously adopted.

WHITE LEAD CO., LTD.

The annual general meeting of the shareholders was held recently at the Cannon-street Hotel, Sir Henry W. Tyler presiding, who regretted that the accounts for 1896 had not been presented sooner, but there was considerable excuse for their manager, who had had much to contend with. He had promised, however, to have the next annual accounts ready by March, 1898; and it was the more necessary that he should do so, because they would then, if not sooner, have to consider, according to the results obtainable meanwhile, whether it would be possible or wise to continue their operations. The Board feared that the accounts for 1897 would not be more satisfactory than those for 1896. In the first three months of the present year there was some difficulty in getting suitable ore, and the long-continued engineering strike had disturbed business and slackened demand. Moreover, the prejudice against their products was not yet overcome, and it had now culminated in legal proceedings, which were being carried on in Edinburgh. The question was whether this Company had the right to apply the name of white lead to their product of sulphate of lead. There seemed to be a trade combination against them. Their innocuous white lead was a great improvement on the poisonous white lead in general use. He wished the directors had a better report to place before them as regarded the business for 1896. The profit and loss account for that period showed a large loss in trading, £4,415. against £8,440. in the previous year, while the total loss for the twelve months ended December 31st, 1896, was £7,328. as compared with £11,098. for the year 1895. In the attempt to make this Company a paying concern, he had, apparently, been throwing away £20 to £30. per day for the last two years, in addition to large sums previously expended by him with the same object. He was still continuing the struggle, but he was afraid there would be few volunteers to come to his assistance. If it

and at last that the case was hopeless, he should not regret had done, because he felt it had been in a good cause. In consequence he moved the adoption of the report, which, after a short time, was adopted unanimously.

LAGUNAS SYNDICATE, LTD.

Directors' report for the twelve months ended June 30th last at the profit and loss account shows a gross profit of £44,331. Interest premium on drawn debenture bonds and general have absorbed £13,426. of the gross profits, which leaves £30,905 to be carried to the balance-sheet. Adding to this £8,103, balance of the profit and loss from the previous account, and £15,000. for debenture bonds redeemed on September 30, and March 31, 1897, there remains a net profit of £24,009. Directors recommend that £22,000. be applied to the payment of dividend of 2s. (two shillings) per share, less income tax, and that the £2,009. be carried forward. During the twelve months review, only one of the syndicate's oficinas has been working, a period of six months and a half only, producing 875,000 of nitrate, being the proportion of the quota assigned by the Combination. The combination which restricted the output limited, and our oficinas are now at liberty to work their full capacity of 300,000 quintals per month. In view, however, of the low price of nitrate, the directors have decided to limit production to the quantity most consistent with economy, being at about 120,000 quintals per month.

CASSEL'S GOLD EXTRACTION CO., LTD.

At the annual meeting, in Glasgow, on Monday, of Cassel's Gold Extraction Company, Limited, Mr. Verel, who presided, said that the shareholders abroad had cordially approved of the reduction of the dividend of the company. There had been economies effected, and these reflected on this year's profits. Looking at the satisfactory results already booked and the improved general prospects, he thought the directors were justified in anticipating not only prosperity for the company, but substantial and immediate dividends on the capital of £58,000. An extraordinary meeting, held afterwards, approved of the reduction in the capital.

RUSSIAN AND THE AMERICAN OIL MONOPOLY. FIGHTING S.O. ABUSES.

REFERRING to the interpellation of Herr Basserman, in the Reichstag (as notified in the *Journal* last week), asking what the Federal Governments proposed to take in order to thwart attempts of the Standard Oil Company to monopolise the German oil trade, Count Posadowsky said the Imperial Government was opposing the competition of German spirits of wine with petroleum. He said that the efforts which were being made to improve the spirit trade would succeed before long. The question of reducing the railway rates for Russian petroleum was also being considered by the Prussian Government, and the deliberations had reached a certain conclusion.

Furthermore, an increase of the Customs duty on American petroleum was a point to be considered. The Imperial Government, if need were, proceed ruthlessly against the abuses of the Standard Oil Company, and adopt without delay the measures which were indicated. Dr. Barth (Radical Union) pointed out that any such measure adopted to strengthen the German competitors of the company would only have the effect of making petroleum dearer to consumers. Baron Heyl zu Herrnsheim urged that vigorous action should be taken against what he described as the American monopoly in the economic field. Count von Posadowsky, Secretary of State, in reply, promised the early introduction of a special freight for Russian petroleum, and of an arrangement admitting of the oil being determined by weight. A system of differential freight was added the Secretary of State, was not desired by the trade.

TECHNICAL EDUCATION IN LANCASHIRE—SCHOLARSHIPS.—The Local Instruction Committee of the Lancashire County Council announced that the following scholarships and exhibitions will be offered in competition next year:—Ten science scholarships, three art scholarships, one music scholarship, five commercial scholarships, and five agricultural scholarships, each value £60. a year, for three years; five junior agricultural scholarships, each value £30. per year, for three years; 30 science exhibitions, 27 art exhibitions, five music exhibitions, 30 commercial exhibitions, 10 agricultural exhibitions, five junior science and commercial exhibitions, value £10 for 1 year. Examinations for the scholarships and exhibitions will be held at various centres throughout the county as under:—Scholarships: 19th, 20th, 21st, and 22nd April; exhibitions: Saturday afternoon and 16th April. The last day for sending in application is 2nd March.

Trade Notes.

AMERICAN ENTERPRISE IN CHINA.—The merchants of New York, Chicago, Philadelphia, and San Francisco have arranged to establish a Chamber of Commerce in Shanghai, and have decided to erect a building at a cost of £40,000, in order to push the sale of American products. [Where will British products come in?—ED., C. T. F.]

THE FOREIGN BEET CROP.—According to inquiries made by the Statistical Association of the Beetroot Sugar Industry, the beetroot crop for this year is estimated for Germany at 1,805,000 tons, as against 1,821,000 for last year; for Austria-Hungary at 836,000 tons, as against 929,900 tons; and for France at 779,000 tons, as against 703,300 tons.

PERSONAL.—On Saturday last, Dr. Wiedemann, Privy Councillor, the well-known professor of Physics and Chemistry at the Leipzig University, and also the founder of the familiar "Wiedemann's Annalen," celebrated conjointly, his own jubilee as a Doctor of Science, and that of the Annalen he has founded and edited. The festivities were participated in by representatives from all the German Universities, and from chemical industries at home and abroad.

ENGINEERS' STRIKE AND MACHINES.—The letter which we published from Mr. Gilbert Little, of the New Conveyor Co., Smethwick, Birmingham, in which he stated that the strike, having made it impossible to obtain delivery of British made machines, had compelled him to purchase German machinery, has led to numerous engineering firms similarly placed, through non-deliveries of tools and appliances, writing to the New Conveyor Co. for the names and addresses of the German makers.

PETROLEUM FATALITIES.—At Macclesfield Infirmary last week, Samuel Henshall, Park-lane, Macclesfield, 73, died from burns. Decayed, who was a cripple and an invalid, accidentally knocked an oil lamp over, causing an explosion, and setting fire to his clothing and bedding and furniture. He was severely burned about the face and hands.—A second fire caused by a lamp accident broke out in the same neighbourhood a few minutes later. Several children had narrow escapes.

BRIGHTER PROSPECTS FOR RUNCORN.—Runcorn is passing through a severe experience. For seven years trade has been bad. Eight hundred houses are empty, and the rateable value of the township has been gradually diminishing. There is now a more hopeful outlook. Works for the manufacture of white lead by a new process are being started, and the United Alkali Company are preparing to manufacture cyanide at Old Quay Works. The Castner-Kellner Chemical Company at Weston are doubling their plant. These changes mean employment for more men.

THE ROCHDALE POLLUTION CASE.—The further hearing of the case of the Black Pits Cotton Spinning and Manufacturing Co., Limited, v. Kelsall and Kemp, Limited, was resumed on Tuesday in the Court of Appeal, consisting of the Master of the Rolls and Lord Justices Chitty and Vaughan Williams, the appeal of the defendants in the action being from an order of the Vice-Chancellor of the County Palatine of Lancaster restraining them from abstracting or polluting the water of the Naden Brook, near Rochdale. This was the eighth day of the hearing. Mr. Haldane having concluded his reply, their Lordships reserved judgment.

THE YEAR'S CROPS.—The preliminary statement has been issued by the Board of Agriculture, showing the estimated total produce and yield per acre of wheat in Great Britain for the year 1897. According to this return, the total produce for the year is estimated at 54,913,230 bushels, as compared with 57,052,952 bushels in 1896. Last year the ground under cultivation for wheat in Great Britain was 1,693,957 acres, while for the present year, there is an increase, that is to say, 1,887,805 acres. In 1896 the estimated yield per acre was 33.68 bushels, and in 1897 29.09. The average yield for the last ten years is placed at 29.49 bushels per acre. As regards barley and oats, the yield is about average.

THE WATER SUPPLY AND SEWERAGE OF AUDLEM.—At the Nantwich Rural District Council, on Saturday, a discussion took place upon a recommendation of the Water Committee that six samples of water should be taken from the wells at Audlem from which the villagers are supplied, and analysed. At a previous meeting, when the matter was discussed, the Council decided to call upon the property owners to provide a supply. Both the medical officer and the engineer of the Council advised an analysis. The Council divided, with the result that the recommendation was rejected by 24 votes to nine. Later, Mr. Bancroft complained of the sewerage arrangements of Audlem, which caused the fouling of a brook. A motion that a committee of the Council meet the Audlem Parish Council to devise a proper sewerage system was rejected, the Council referring the report as to the pollution of the brook to the Audlem Council for their observations.

CHANGE OF ADDRESS.—Mr. Andrew Stephenson, fire cement merchant, begs to announce change of address from 182, Gresham House, to 182, Palmerston Buildings, Old Broad-street, London, E.C.

THE CLEVELAND IRON TRADE.—The Cleveland ironmasters and men have agreed to the adoption of three shifts a day, or an eight hours day, at the blast furnaces, to commence on the 18th inst., wages to be on the sliding scale which was renewed for three years.

FRAUD-PREVENTING PAPER.—Messrs. Marcus, Ward, and Co. are issuing specimen copies of cheques, treated in such a manner as to render alterations thereon impossible without detection. These are of three kinds—viz.: paper informally tinted with a delicate colour; paper similarly tinted, and impressed with an elaborate design in fugitive colour; and paper similarly tinted and impressed, and, in addition, ingeniously impregnated with chemicals of such a nature as to produce a new and entirely different colour when ink-dischargers are applied to it. Of this latter kind, Professor Frankland has stated that, in his opinion, it would be impossible to efface writing without such a discolouration of the paper as to render detection certain. The value to the commercial world of such a readily-negotiable medium as cheques being placed beyond successful tamper by untrustworthy persons is too palpable to require elaboration, and it would seem to be a necessity to adopt the safe course in running businesses in which the cheque plays so important a part.

PETRIFFITE, LTD.—Petritite, Limited, has been formed to place on the market the cement called Petritite, which has, it is claimed, value for binding together all kinds of waste material, such as quarry waste, shale, carboniferous clinkers, &c., into useful blocks. A field for its use will, it is anticipated, be in connection with slate waste, now worse than useless. Coal dust mixed with 3 per cent. of petritite produces, it is said, briquettes of excellent quality. (See also *C. T. J.*, 597, p. 115; and 522, p. 349.) The capital is £300,000., in shares of £1. each, of which 100,000 shares are for working capital. The issue is now announced of £250,000. shares of £1. each, of which 80,000 shares will be allotted to the vendors as fully paid up in part payment of the purchase price, they agreeing to postpone their right to dividends upon such shares until the holders of other shares have received dividends of 8 per cent. per annum in each of the first two years respectively after allotment, and 170,000 shares (of which 50,000 are for working capital) are now offered for subscription at par.

THE COAL "COMBINE" IN LANCASHIRE.—Negotiations have already been opened for the amalgamation (early in 1898), of three large and old established colliery concerns in the Bolton district and South-East Lancashire. It is now stated that similar steps are being considered with respect to collieries in the Wigan district, and if this second "combine" is carried through it will be the most important amalgamation of the kind that has been effected for a considerable time past. The collieries in question supply both house and steam coals, have excellent connections with the leading railways of the north, and are also in direct communication with the Manchester Ship Canal Docks, and closely with the large coal basin at Partington on the waterway. The Canal Company is offering every inducement to coal shippers via the waterway, and we understand are going so far as to guarantee exporters of the "Black Diamonds" to the extent of the toll chargeable on their shipments by the Canal. With this guarantee and the other appreciable savings which should be effected by the combination principle better times are expected for the industry. There are some strong people behind the movement, and, as a preliminary, one joint stock company was recently formed.

PRICES OF MECHANICAL AND CHEMICAL PULP.—The Leipzig Chamber of Commerce reports that prices of mechanical and chemical wood pulp and of straw stuff went down last year partly in consequence of slackness in the paper trade, and partly through competition from Scandinavia, which was particularly felt in the British and other export markets. There were also very cheap offers from America in the commoner qualities, which, however, could not be made use of in Saxony. In paper making a turn for the better has taken place; already the few months showed more animation as compared with the last two years. In the second quarter the demand rose considerably, showing more confidence and greater enterprise. During the summer all mills were fully occupied, and in autumn business was so good that four to six weeks' time for delivery became necessary. Moreover, the Sunday Rest Act considerably lessened production. Yet an improvement in prices could not be enforced. On the contrary, efforts were made to cut down figures still more, bad as they were. The general result notwithstanding was satisfactory, because an increased production reduced general expenses. The exportation to America in nearly all kinds of paper was larger than ever. The business with Austro-Hungary was small, as the duty prevented competition with the home production in that country, which is greatly assisted by low wages and cheap rags of good quality. This refers chiefly to the better class papers. The exportation to the Balkan countries was checked by the same reason, except to Roumania, where business has increased very slightly.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols have fallen still lower, but seem to have found their level, as they have been selling much more freely. Nearest values are—90's, 1s. 8d., and 50/90's, 1s. 10d. Crude carbolic is quiet, but 40's crystals are firmer at 7½d. Naphthas are unchanged. Anthracene and creosote firm in price and position. Pitch is more hopeful at about 20s., f.o.b. East Coast.

Sulphate of ammonia is firm in price, with an improving market. There has been a distinct advance, and the London and Scotch markets are very firm. Nearest prompt values are:—London outside makes, £9; Liverpool, £8. 18s. 9d. to £9; Hull £9; and Leith, £9. In the forward market, Beckton quotation is now £9. 5s. for Jan-April delivery.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade there is a fair volume of business being done, especially for export, and prices are maintained for spot deliveries. There is, however, a generally weaker tendency on forward business. For caustic soda quotations remain as last week, viz.:—F.o.b. Liverpool, 77%, £8. 10s.; 74%, £8. 2s. 6d.; 70%, £7. 5s.; 60%, £6. 5s. nett, per ton, 10-ton lots. Alkali, 58%, unchanged for prompt or forward delivery at £3 17s. 6d., bags, f.o.r. In soda crystals and bicarbonate there is no alteration. Bleaching powder is fairly active for early shipments at prices which vary, according to market, from £5. 15s. to £6. 5s. f.o.b. Liverpool and Tyne, and £5. 10s. f.o.r. makers' works. Forward contracts for home trade, however, are still booked at £5. 2s. 6d. Chlorates have further declined, soda to 4¼d. and potash to 3½d. per lb. Sulphate of copper is fairly steady at £16. f.o.b. Sulphur firm at £4. 12s. 6d. f.o.r. In saltcake there is only moderate business doing at 18s. to 19s. f.o.r. in bulk. Potash, caustic and carbonate continue to offer at slightly lower rates for forward delivery. Prussiate of potash steady at 6½d.; cyanide, 98%, 1s. 2d. to 1s. 3d. per lb. White powdered arsenic rather easier at £21. 5s. to £21. 10s. f.o.r. Aniline oil and salt are firm at recent quotations, with lower tendency for forward delivery. Carbolic acid crystals rather dearer. Acetate of lime, brown, very firm at £5. 10s. to £5. 15s. c.i.f. U.K. ports. White sugar of lead steady at £23. c.i.f. Acetate of soda rather dearer at £11. per ton c.i.f. Other acetates quiet. Sulphocyanides dull and without alteration in value. Zinc chloride dearer.

REPORT ON MANURE MATERIAL.

For the time of the year there is a fair business doing. Mineral phosphates, however, hang fire at the advanced prices, buyers being fairly well covered for some time to come, and being disposed to wait easier prices with easier freights later.

There is nothing to report in River Plate bones in the absence of cargoes offering. There are sellers of Bombay bone meal, affoot and for shipment, at £4 7s. 6d. per ton, but so far buyers refuse to give the price. Common grinding bones are still inquired for.

Nitrate of soda is firm at 7s. 6d. per cwt. for good up to 7s. 7½d. for fine quality on spot.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron quiet: Scotch warrants closed at 45s. 0½d.; Middlesbro', 40s. 1½d. cash; and hematite, 47s. 1½d. Copper easier: Chili bars, G.O.B.'s and G.M.B.'s, closed at £48. 6s. 3d. to £48. 11s. 3d. cash, and £48. 15s. to £49. three months. Tin quiet: Straits closed at £62. 8s. 9d. to £62. 18s. 9d. cash, £63. 1s. 3d. to £63. 11s. 3d. three months; Australian, £63. 2s. 6d. English ingots, £66. Lead quiet: Spanish, £12. 11s. 3d.; English, £12. 17s. 6d.; Silesian spelter, ordinary, £18. 1s. 3d. to £18. 2s. Nickel, 1s. 2½d. Antimony, £30. 10s. Quicksilver: First hand £6. 17s. 6d.; second hands, £6. 17s. Copper shares firm: Cay 3½ to 4; Copiapo, 1½ to 2½; Libiola, 2½ to 3½; Mason at Barry, 2½ to 3½; Rio Tinto, 25 to 25½; Tharsis, 6½ to 6½.

GLASGOW, WEDNESDAY.—Market steady, and a small business. Scotch done at 45s. 0d. to 45s. 0½d. cash; also at 45s. 3d. one month buyers, 45s. 0½d. cash; sellers, ½d. more. Cleveland, buyer 40s. 1½d. cash; sellers, 40s. 2d. Cumberland hematite done 48s. 1½d. and 48s. 2d. one month; buyers, 47s. 11d. cash; seller ½d. more. Middlesbrough hematite, buyers, 48s. 9½d. cash sellers, 48s. 11d.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is slow of sale, but keeps firm in price. The market is quiet both for spot and to arrive. Stocks of olive being small, prices are well maintained, though somewhat at the expense of business, the demand being slow. Linseed stands at 15s. 9d. to 16s. 6d. per cwt. for Liverpool makes in export cask, and is firm thereat. Cottonseed quiet at 14s. 9d. to 15s. 6d. per cwt. for Liverpool refined. There is a fairly good prompt demand for castor oil, prices for both good seconds Calcutta and first pressure French now being 3½d. to 3¾d. per lb. Tallow is dear, the strong position limiting business. Resin is about the same as regards prices, with a moderate demand. Spirits of turpentine quiet at 24s. 3d. per cwt. Petroleum is quoted 5¼d. to 7d. for American and 4¾d. to 5d. per gallon for Russian refined.

CAKES.—An improved inquiry has been experienced for American Western linseed, and good business done in recent arrivals at £6. 18s. 9d. to £7. 2s. 6d. An advance has been obtained for Liverpool makes on the fair trade put through at £8. to £8. 10s. per ton. American decorticated cottonseed have ruled very quiet, and prices have receded 2s. 6d., but Liverpool makes have been in fair request at £6. 5s. to £6. 15s. per ton. Undecorticated Liverpool makes are the turn in buyers' favour, but have met a fairly active demand at £4. 1s. 3d. to £4. 10s. Egyptians are also against sellers, £4. 1s. 3d. per ton being now the quotation, and quiet thereat.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire—common £10., medium £12., best £15.; Derbyshire—common 40s., medium 50s., best 60s.; Welsh—best 90s., seconds 50s., and common 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead: £16. Red lead unchanged. Venetian red: £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide: £22. 10s. to £25.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—Market values of both linseed and cotton oils continue very flat, and in some positions they have receded from 2s. 6d. to 5s. per ton. The value of oil seeds remains very quiet, although the supply is not large. The imports to date in the following articles, against the same time a year ago, have been:—Linseed, 698,607 qrs., against 926,594 qrs.; rapeseed, 95,532 qrs. against 100,475 qrs.; cottonseed, 192,676 tons against 154,696 tons; cloverseed, 34,674 cwt. against 62,546 cwt.; oilcake, 10,564 tons against 12,183 tons; olive oil, 4,292 tons against 5,484 tons; tar, 14,957 barrels against 18,166 barrels. Linseed oil is very flat with a spot value ruling about 13s. 9d. per cwt.; forward month 13s. 10½d.; and Jan.-April, 14s. 4½d. Boiled and refined, £1. to £1. 10s. per ton extra. Refined cotton oil is very quiet, spot naked, 12s. 6d. to 12s. 9d. per cwt.; forward Dec.-April, 12s. 10½d.; filtered qualities extra from £1. to £1. 5s. per ton; crude oil is quoted spot 11s. 6d., but 11s. 10½d. paid Jan.-April; ordinary casks £1. and barrels £1. 10s. per ton extra. Spirits of turpentine, 24s. 6d. to 24s. 9d. Castor oil from 3½d. per lb. Arachide nut oil, £28. per ton upwards. Resin from 5s. 9d. per cwt. for medium grades. Oleines from £16. per ton for brown to £20. for re-distilled white. Very little demand for olive oils, owing to slackness in the manufacturing districts of the West Riding—prices unchanged. Olive oil soap, £16. per ton. Cod oils, £16. to £18. per ton. Stockholm tar scarce, 24s. 6d. per barrel. Danish butter realising 120s. to 123s. per cwt.; Dutch, 100s. to 105s.; Canadian, 80s. to 95s.

CAKES.—The demand for all kinds of feeding stuffs continues very fair. Linseed cakes firm, 95% pure, £7. 15s. to £7. 17s. 6d. Oil-cakes (linseed), £6. 15s. to £6. 17s. 6d.; Russians, £7. 10s. to £7. 12s. 6d.; Americans, £7. to £7. 2s. 6d. Cotton cakes steady, £4. 1s. 3d. to £4. 2s. 6d. for best makes, and 2s. 6d. per ton less for secondary. Rape cakes, Black Sea, £4. 10s., and East India, £6. 5s. per ton.

PAINTS.—A very poor demand, with prices unchanged.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

General chemicals are all very quiet now, and there can be little of life expected on this side of the close of the year and accompanying holidays. Notwithstanding the quietness, and the practical close of Continental shipments for the season, prices seem to hold mostly to the old figures, at least so far as spot business is concerned. Possibly some of the contracts entered into against next year's supplies may have shown some allowance in buyers' favour. Sulphate of copper is again down a step, at about £16. to £16. 2s. 6d. In paraffins and mineral oils the only movement seems to be a very small easing-off in paraffin spirit (naphtha), which can again be done down to 6½d, although best brands command 7d. still. Sulphate of ammonia is stronger, as judged by makers' quotations, which at the moment don't go below £8. 15s., while some are holding for £8. 17s. 6d.

Chief prices current are:—Soda crystals, £2. 10s. to £2. 17s. 6d. nett, Tyne, soda ash, 48/62°, £4. 5s. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £4. 17s. 6d. to £5. 7s. 6d. nett, Glasgow; caustic soda, white, 74° £8. 2s. 6d., 70/72° £7. 5s. od., 60/62° £6. 5s. od., cream 60/62° £6. all nett, Liverpool; bleaching powder, 35/37°, £6. 5s. nett, Tyne; saltcake, 19s.; borax, English, refined, £15. and boracic acid, £26. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4d. nett, for Scotch and English deliveries (for export, 3¾d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3d. nett, f.o.b. Glasgow); chlorate of potash, 3¾d. less 5%, any port: nitrate of soda, 7s. 6d. to 7s. 9d.; sulphate of ammonia, £8. 15s. to £8. 17s. 6d., prompt, f.o.b. Leith; salammoniac, first and second white, £33. and £31. nett any port; sulphate of copper, £16. to £16. 2s. 6d. less 5% Liverpool; paraffin scale, hard, 1¾d. to 1½d. per lb., soft, 1½d. per lb.; paraffin wax, 120° semi-refined, 1¾d. to 2d. per lb.; paraffin spirit (naphtha), 6½d. to 7d. per gallon; paraffin oil (burning), No. 1, 5¾d., and crystal, 6d., at Glasgow and other big centres, for Scotch buyers (English sales a shade lower): ditto (lubricating) 86° £4. 10s. to £5. 0s., 88° £5. 10s. to £6. and 89/89° £6. 5s. to £6. 15s. Week's imports of sugar at Greenock were 12,300 bags beet unrefined.

TYNE CHEMICAL REPORT.

TUESDAY.

The chemical trade is quiet with lessened exports. Prices generally remain unaltered. Soda crystals £2. 12s. 6d. per ton, gross weight, locally. Caustic 76/77° £9. per ton, 70° £7. 10s. per ton. Sulphur still scarce at £5. per ton.

Bleaching powder, sons, £6. 5s. per ton, nett; hards, £6. 10s. per ton, nett; caustic soda, 76/77° £9. and 70° £7. 10s. per ton, nett; recovered sulphur, 2 cwt. bags, £5. per ton, nett; soda ash, 48°, £4. 10s. per ton, nett; do., 50°, £4. 12s. 6d. per ton, nett; do., 52°, £4. 15s. per ton, nett; alkali, 36°, £3. 12s. 6d. per ton, nett; white alkali, 48°, £5. per ton, nett; do., 50°, £5. 5s. per ton, nett; do., 52°, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 4½d. per lb., less 5%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95% crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham salt is steady at 9s. per ton, f.o.b. Tees.

COALS.—Trade generally is good and prices fully maintained. There is an excellent demand for steam and gas coals. Coke remains steady with increased consumption. Best Northumbrian steam 8s. 3d. to 8s. 6d. per ton; second qualities, 7s. 3d. to 7s. 6d. per ton; small steam, 3s. 3d. to 3s. 6d. per ton; bunker coals, 7s. 9d. to 8s. 3d. per ton; gas coals 8s. od. to 8s. 6d. per ton; household coals, 10s. to 11s. per ton; coke, 16s. 6d. to 20s. per ton.

New Companies.

Britannia Soap Co., Ltd.—CAPITAL £25,000. in £1. shares (7,500 £5. % cum pref.). This company has been formed to acquire the business carried on as "The Britannia Soap Co.," and the business of the "Westfield Soap Co., Ltd.," to enter into certain agreements, and to carry on the business of soap and candle manufacturers, colour, dye, and paint manufacturers, chemical manufacturers, etc. The subscribers to the memorandum of association R. Welsby, 357, Knutsford-road, Warrington, soap manufacturer; M. J. Evans, 37, Cambrian View, Chester, traveller; J. Schofield, 320, Liverpool-road, Patricroft, grocer; H. Schofield, 1, Green-street, Patricroft, grocer; H. Pennington, 336, Liverpool-road, Patricroft, plumber; R. S. Oldham, 214, Stamford-street, Ashton-under-Lyne, grocer; W. E. Fowler, Market Gate, Warrington, solicitor.

British Incandescent Mantles, Ltd.—CAPITAL £8,500. in £1. shares. This company has been formed to adopt an agreement with the Light and Heat Co., and to manufacture, sell, and deal in mantles, fittings, and other appliances for incandescent lighting. The subscribers to the memorandum of association are:—B. Parker, 13, Clement's Lane, E.C., solicitor; W. A. Morbey, 78, Corby-street, Finsbury Park, N., clerk; J. Smith, 46, Dartmouth-road, Forest Hill, S.E., secretary; N. Sheffel, 14, Queen's-road, Peckham, chemist; L. Sternberg, 2, Bath-street, Mile End, E., clerk; M. W. Ash, 556, Mansion House Chambers, E.C., engineer; H. Simmons, 3, Chesterton-road, Kensington, engineer.

Carbona Syndicate, Ltd.—CAPITAL £3,000. in £10 shares. This company has been formed to adopt an agreement with W. R. Bell, and to manufacture carbona and other products from peat and peat earth. The number of directors is not to be less than 2 nor more than 5; the first are C. W. C. Hutton, T. Moore, and T. T. Turnbull. Qualification, £50.; remuneration as fixed by the Company.

Handford, Greatrex & Co., Ltd.—CAPITAL £90,000 in £1. shares. This company has been formed to acquire and carry on the business of tanner, curriers, jappers, and enamellers of leather goods, carried on by A. W. Greatrex as "Handford, Greatrex and Brother," at Walsall, Staffs., and at Paris, and to enter into an agreement with H. Atkinson. The subscribers to the memorandum of association are:—J. M. Bayley, 47, Temple Row, Birmingham, solicitor; W. J. Adlard, 30, Moor-street, Birmingham, paper maker; E. Toney, 47, Temple Row, Birmingham, clerk; B. N. Green, 47, Temple Row, Birmingham, solicitor; T. J. Currie, 47, Temple Row, Birmingham, clerk; J. E. Smith, 47, Temple Row, Birmingham, cashier; S. Smith, 47, Temple Row, Birmingham, clerk. Registered office, The Works, Whittemere-street, Walsall, Staffs.

Cambrian Lubricants, Ltd.—CAPITAL £2,000. in £10. shares (150 pref.). This company has been formed to carry on the business of pitch, tallow, grease, and oil importers, mixers, manufacturers, dealers and merchants. Registered without articles of association by J. T. Lewis, 54, Chancery Lane, W.C.

Meldreth Portland Cement and Brick Co., Ltd.—CAPITAL £30,000. in £1. shares. This company has been formed to adopt an agreement with H. O. S. Ellis, and to carry on the business of cement, lime, brick, tile, and manure manufacturers and merchants. The subscribers to the memorandum of association are:—W. Saint, Devonshire-road, Cambridge, builder; J. Adcock, Meldreth, Cambs., farmer; Mrs. M. L. Ellis, Meldreth, Cambs.; E. Vinter, 22, St. Andrews-street, Cambridge, solicitor; H. H. Lavington, 7 and 8, Ironmonger Lane, E.C., solicitor; S. E. Hatton, 46, Pembroke-road, Bayswater, gentlemen; E. Woodington, 63, Queen Victoria-street, E.C., chartered accountant. Registered office, 4, Petty Cury, Cambridge.

Unique Soap and Chemical Co., Ltd.—CAPITAL £40,000. in £10 shares. This company has been formed to enter into a certain agreement and to carry on the business of manufacturers of and dealers in soap, chemicals, and bleaching, dyeing, printing, and fulling materials. The subscribers to the memorandum of association are:—J. Barlow, Wellfield, Bury, bleacher; S. F. Butcher, Fairlawn, Bury, solicitor; W. Brierley, Moorfields, Bury, auctioneer; G. Holt, Ferngrove, Bury, dentist; J. W. Nicholson, Burbage House, Buxton, mercer; A. Ashworth, Fernhill, Bury, chemical manufacturer; J. A. Wormald, 14, The Park, Eccles, game dealer. Registered office, Hampson Mills, Bury.

Standard Mica and Exploration Co., Ltd.—CAPITAL £120,000. in £1. shares. This company has been formed to acquire certain mining rights and properties in the province of Quebec, Canada, to adopt an agreement with the Securities Corporation, Ltd., and to search for, raise, and deal in mica, gold, coal, iron, etc. The subscribers to the memorandum of association are:—T. T. Curtis, 17, Beulah-road East, Thornton Heath, gentleman; H. T. Adams, 10, Brook-road, Highgate, N., gentleman; C. T. Woosnam, 54, Ansdell-road, Peckham, clerk; J. B. Savel, 68, Harwood-road, Fulham, S.W., clerk; C. R. Smith, 281, Earlsfield-road, S.W., clerk; N. Coates, 403, Goldhawk-road, Hammersmith, clerk; E. Squirrell, 46, Eitta-street, New Cross, S.E., clerk.

Stiff & Co., Ltd.—CAPITAL £60,000. in £10. shares (4,000 pref.). This company has been formed to adopt an agreement with A. W. Stiff and T. James for the acquisition of the business of "Stiff and Co.," of Bristol, and to carry on the business of starch and rice manufacturers, merchants, and brokers. The subscribers to the memorandum of association are:—A. W. Stiff, 9, Princes Buildings, Clifton, Bristol, manufacturer; T. James, Aylmer House, Weston-super-Mare, manufacturer; J. W. James, 119, Redland-road, Bristol, chemist; Mrs. T. James, Aylmer House, Weston-super-Mare; H. G. Hill, Carlton Chambers, Bristol, chartered accountant; W. F. Langworthy, 21, Princes-road, Clevedon, Somerset, solicitor; T. F. James, 16, Buckingham Palace-road, S.W., instructor. Registered Office, 29, Redcliffe-street, Bristol.

IMPORTS OF CHEMICAL PRODUCTS

AT
THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending November 4th.

Acetic Acid —			
Holland, 5 pks.	J. Owen		
" 55	R. W. Greeff & Co.		
" 68	Little & Johnston		
" 72	A. & M. Zimmermann		
" 15	Leach & Co.		
Acetone —			
Belgium, £495	W. S. Barber		
Germany, 150	Matthews & Luff		
Alum —			
Holland, 509 pks.	Ohlenschlager Brs.		
Ammonia —			
Holland, £37 12 brls.	Little & Johnston		
Antimony Ore —			
Bastia, 32 t.	Smith, Sundius & Co.		
Asbestos —			
Italy, £300	J. Coppo & Co.		
Germany, 12	Craven & Co.		
Italy, 10	London Asbestos Co.		
" 120	W. Byford		
N. Russia, 700	Bailey & Leatham, Ld.		
Canada, 575	J. Owen		
Barytes —			
Holland, 176 cks.	Taylor Brs.		
" 23	J. L. Lyon & Co.		
Belgium, 41 brls.	W. Harrison & Co.		
Holland, 110 cks.	"		
Bleaching Powder —			
Germany, £820	J. M. Steel & Co.		
Holland, 56	J. Owen		
Bone Meal —			
Holland, 124 t.	Hollingshurst & Co.		
E. Indies, 560	A. Hunter & Co.		
Bromine —			
Germany, 40 cs.	A. & M. Zimmermann		
Camphor —			
Germany, 203 tubs	S. Figgis & Co.		
Caoutchouc —			
Holland, 40 c.	J. Barber & Co.		
Zanzibar, 7	Hale & Son		
P.E. Africa, 85	Kleinwort, Sons & Co.		
Aden, 31	Wallace Brs.		
Zanzibar, 119	S. Figgis & Co.		
U. States, 1	J. T. Morton		
Belize, 5	Belize Est. & Prod. Co.		
Singapore, 100	P. Heydemann		
E. Indies, 18	Prop. Bull Wf.		
Zanzibar, 3	Clarke & Smith		
" 31	L. & I. D. It. Co.		
Singapore, 213	Huttenbach & Co.		
Castor Oil —			
France, 20 cks.	Snowdon, Son & Co.		
" 15 brls.	20 cs. F. Boehm		
" 30	Beresford & Co.		
Italy, 12 cs.	Evans, Lescher & Co.		
France, 16 cks.	C. S. Lovell		
" 15 brls.	Burrell & Co.		
" 15	Anderson, Weber & Smith		
Caustic Potash —			
Germany, 80 cks.	J. R. Francis & Co.		
France, 16 drs	100 c. Petri Brs.		
Chemicals (otherwise undeciphered)			
Germany, £160	T. H. Lee		
" 60	L. & I. D. It. Co.		
" 52	Phillips & Graves		
Belgium, 228	T. H. Lee		
Holland, 11	J. M. Steel & Co.		
Germany, 711	A. & M. Zimmermann		
France, 40	B. & F. Wf. Co.		
Cream of Tartar —			
Italy, 15 cks.	Fellows, Morton & Co.		
Holland, 100 kgs.	Kirkpatrick & Co.		
France, 7 cks.	B. & F. Wf. Co.		
" 4	W. C. Bacon & Co.		
" 6	J. W. Cook & Co.		
" 113	H. Johnson & Sons		
" 5	M. Ashby, Ld.		
Dextrine —			
Germany, 50 bgs.	M. D. Co.		
" 10	H. Lorenz		
Dyestuffs —			
Annatto			
Ceylon, 60 cs.	Hoare, Wilson & Co.		
Anthracene			
Holland, 163 pks.	Burt, Boulton & Co.		
Argols			
Italy, 999 pks.	B. Jacob & Sons		
" 467	Thomas S. T. & L. Co., Ld.		
Cochineal			
Canaries, 35 bgs.	G. S. Bruce		
" 2	Swanston & Co.		
" 25	14 pks. W. M. Smith & Sons		

" 53	Sperling & Williams		
" 52	Hendrey & Martin		
" 62	Kuhner, Henderson & Co.		
Cutch			
Ceylon, 414 cs.	Cayzer, Irvine & Co.		
Singapore, 700	Borneo Co., Ltd.		
Extracts			
U. States, 19 cs.	Rosenberg, Loewe & Co.		
France, 25 cks.	Innox Tannery Co.		
" 28 pks.	Union Lge. Co.		
Germany, 20 cks.	40 bgs. T. H. Lee		
Bastia, 250 brls.	Union Lge. Co.		
Italy, 275	"		
Germany, 500 cks.	Boutcher, Mortimore & Co.		
" 53 bgs.	J. Greig		
France, 20 cks.	B. & F. Wf. Co.		
" 10	T. Trapp & Sons		
Canada, 127	Boutcher, Mortimore & Co.		
Gambler			
Singapore, 573 bls.	E. Boustead & Co.		
" 254	R. & J. Henderson		
" 3,521	Adamson, Gilfillan & Co.		
" 449	Brown & Elmslie		
" 222	J. Greig		
" 695	Brinkmann & Co.		
Indigo			
E. Indies, 5 chts.	H. J. Perlach & Co.		
" 20	J. W. Cook & Co.		
" 10	F. Huth & Co.		
U. States, 7 pks.	Rosing Brs. & Co.		
E. Indies, 13 chts.	Parry & Co.		
" 40	Park, Macfadyen & Co.		
" 6	Binny & Co.		
Logwood			
Belize, 188 t.	W. Shelcott		
" 97	Belize Est. & Prod. Co.		
Myrabolams			
E. Indies, 1,367 pks.	W. Shelcott		
Naphthalene			
Germany, 12 cks.	Fleming's Oil & Chemical Co.		
Nitro Naphthalene			
France, 5 cks.	Forbes, Abbott & Co.		
Saffron			
Spain, 1 cs.	J. Knill & Co.		
Shumac			
Italy, 225 pks.	T. S. Harris & Co.		
" 700 bls.	Bailey & Leatham, Ld.		
Tanners' Bark			
N. Zealand, 16 t.	L. & I. D. It. Co.		
Adelaide, 31	Beresford & Co.		
" 115	Anning & Cobb		
Belgium, 41 cs.	Leach & Co.		
Valonia			
Turkey, 32 t.	Deering & Robottom		
" 75	Hicks, Nash & Co.		
Farina —			
Holland, 50 bgs.	J. Knill & Co.		
Germany, 165	Hernu, Peron & Co.		
Holland, 150	I. Barber & Co.		
" 100	R. Bennett & Co.		
Glucose —			
U. States, 4,603 pks.	4,630 c. R. G. Hall & Co.		
" 500	500 Ohlenschlager Brs.		
" 50	L. & T. Contract & D. Co.		
Germany, 10	21 Millwall D. Co.		
" 50	495 Bennett S. Co.		
U. States, 70	308 T. M. Duche & Sons		
" 1,000	1,000 Fellows, Morton, & Co.		
" 250	250 Williams, Torrey, & Co.		
" 1,000	1,000 E. Thompson & Co.		
Germany, 20	163 M. D. Co.		
France, 100	100 L. Norman & Co.		
U. States, 1,100	1,100 Smith & Co.		
" 400	400 Brown & Cr.		
" 500	500 G. Clark & Sons		
Glue —			
Germany, £38	T. H. Lee		
Belgium, 804	J. Barber & Co.		
Adelaide, 180	T. J. & T. Powell		
U. States, 9	Lunham & Moore		
" 175	Derralleinteers Roller Co.		
Holland, 280	M. H. Voss		

Lamp Black— France, 15 cs. Union L. Co. Ltd. Germany, 4 kgs. L. & I. D. Jt. Co.	Spain, 100 Union L. Co. 50 Brandram Brs & Co.	Bone Meal— Bombay, 480 bgs. W. & R. Graham & Co.	Norfolk, Va., 146 brls. Boston, 20 cs. J. Thomson Philadelphia, 20 G. Greiner & Co.
Lead Acetate— Holland, £100 Beresford & Co.	Talc— France, £80 Blackwell & Co.	Castor Oil— Marseilles, 11 cs. & qty. Calcutta, 1,008 Ralli Brs.	Starch— Philadelphia, 500 aks. Antwerp, 40 cs.
Manure— Belgium, 1 ft. H. Johnson & Sons	Tar— Holland, 20 pks. M. Bencher	Coal Pr ducts (otherwise undes.)— Philadelphia, 1,000 cs.	Stearine— Baltimore, 31 tcs. Antwerp, 51 bgs.
Methyl Alcohol— Germany, 2 dms. Tingle, Jacobs, & Co.	Tartaric Acid— Italy, 47 pks. Howard & Sons	Cod Oil— St. John's, Nfld., 34 cks. 14 brls. J. J. Langley	Tallow— Boston, 100 tcs. New York, 50 bds. Baltimore, 215 tcs. San Nicolas, 200 cks.
Molasses— U. States, 360 pks. 2,160 c. Wilsons, Leylands Line	Ultramarine— Holland, 10 cs. Hernu, Peron, & Co. Belgium, 21 cks. Leach & Co.	Colours— Hamburg, 1 ck. Boulogne, 3 1 cs.	Tartaric Acid— Marseilles, 22 brls.
Nickel Salts— Germany, £36 Petri Brs.	Varnish— Belgium, 4 pks. T. H. Lee U. States, 1 Taylor Brs.	Copper Sulphate— Bordeaux, 5 cks.	Treacle— New York, 450 brls. Philadelphia, 526
Nitre— Chili, 15,203 bgs. W. Montgomery & Co.	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Cottonseed Oil— New York, 102 brls. Galveston, 250	Turpentine— Brunswick, 1,750 brls.
Ochre— France, 20 cks. Prop. Hay's Wf. Holland, 6 pks. 4 dms. Philipps & Graves	Yell. millon— Hong Kong, 10 cs. L. & I. D. Jt. Co. 10 Blundell, Spence, & Co.	Cream of Tartar— Bordeaux, 31 cks. Tarragona, 1 ppe. Barcelona, 5 cks.	Ultramarine— Rotterdam, 24 cks.
Phosphate Rock— France, 145 t. G. F. Galbraith Belgium, 50 Chemical Works Co. (Late H. & E. Albert)	Wood Pulp— Sweden, 960 pks. W. E. Bott & Co. Norway, 600 Alsing & Co.	Cryolite— Copenhagen, 1 cs. Ehrystal & Anson	Varnish— New York, 1 brl. W. A. W.
Pitch— France, 57 brls. Poth, Hille, & Co. 33 Callenders Cable Co.	Zeolite— Belgium, 17 John Cockerill Line Italy, 193 A. Marizzano	Dyestuffs— Annatto Bordeaux, 5 cks.	Verdigris— Marseilles, 10 cks. 10 brls. Bordeaux, 4
Plumbago— Italy, 59 cks. Morgan Crucible Co. Ceylon, 57 Cayzer, Irvine, & Co.	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Myrabolams Bombay, 635 bgs. Aldridge, Salmon & Co.	White Lead— Ghent, 15 brls. Rotterdam, 20 cks. 7 cs. J. T. Fletcher & Co.
Potash— Germany, 120 c. F. W. Berk & Co., Ltd.	Wood Pulp— Sweden, 960 pks. W. E. Bott & Co. Norway, 600 Alsing & Co.	Extracts Halifax, N.S., 2 kgs. 154 bxs.	Wood Pulp— Baltimore, 1,578 rolls Thin & Sinclair Boston, 743
Potassium Bichromate— Germany, 20 cks. Howard & Sons	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Fustic Vera Cruz, 297 logs R. B. Watson & Co.	Zinc Oxide— Antwerp, 22 cks. 10 brls.
Potassium Carbonate— Germany, 240 c. J. M. Steel & Co. 474 Gas Light & Coke Co. Petri Brs.	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Saffron Valencia, 1 cs. G. Meyer & Co.	MANCHESTER. Week ending December 4th.
Potassium Chloride— Holland, £50 H. Johnson & Sons Sweden, 100 kgs. G. Boor & Co. Germany, 508 bgs. Bessler, Waechter, & Co.	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Shumac Marseilles, 25 bgs.	Alum— Rotterdam, 8 cks.
Pumice Stone— Italy, 5 t. L. & N.-W. Rly. Co. 2 Burrell & Co.	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Valonia Syra, 193 bgs. L. Vassinas Smyrna, 7 86 t Barry Brs. C. Balian	Aniline Colours— Rouen, 3 cks.
Quicksilver— Italy, 750 brls. L. & I. D. Jt. Co.	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Glucose— New York, 100 brls. T. M. Duche & Co.	Barytes— Antwerp, 40 bgs.
Rosin— Holland, 8 pks. J. Owen U. States, 6,178 brls. F. & S. Chiesman & Co.	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Glue— Boston, 13 brls. 48 crt. 20 kgs. Richard & Ward	Bone Ash— Paysandu, 665 t. Haycraft & Pethick
Saltpetre— Germany, 30 cks. J. Hall & Son 2 T. H. Lee	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Infusorial Earth— Hamburg, 116 bgs.	Boracic Acid— Hamburg, 4 cks.
Soda— Belgium, 400 c. A. J. Luke & Co. 800 G. A. Steel 80 Capes & Self	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Iodine— Valparaiso, 134 brls.	Camphor— Hamburg, 1 brl. 5 cs.
Starch— Holland, 930 cs. Little & Johnston Germany, 680 Horne & Co. 300 C. Tennant, Sons, & Co.	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Limestone— Antwerp, 1 crt.	Chemicals (otherwise undes.)— Rouen, 42 cks. Rotterdam, 59 brls. Hamburg, 1 ck.
Saltpetre— Germany, 30 cks. J. Hall & Son 2 T. H. Lee	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Litharge— Rotterdam, 10 cks.	Colours— Rouen, 3 cks. Antwerp, 4 J. T. Fletcher & Co.
Soda— Belgium, 400 c. A. J. Luke & Co. 800 G. A. Steel 80 Capes & Self	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Molasses— N. Orleans, 1,953 brls.	Farina— Rotterdam, 1,000 bgs. N. M. Jackson 200 Stettin, 2,110 Browne, Geveke, & Co.
Starch— Holland, 930 cs. Little & Johnston Germany, 680 Horne & Co. 300 C. Tennant, Sons, & Co.	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Naphtha Philadelphia, 6,895 brls.	Glucose— New York, 150 brls. Stettin, 5 cks. 400 bgs.
Saltpetre— Germany, 30 cks. J. Hall & Son 2 T. H. Lee	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Ochre— Marseilles, 156 brls. 3 cks. Alicante, 600 sks. Robert Evans & Co.	Glue— Rouen, 21 cks. 20 brls. Antwerp, 126 cs. 40
Soda— Belgium, 400 c. A. J. Luke & Co. 800 G. A. Steel 80 Capes & Self	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Paint— Boston, 2 kgs. Musson & Co.	Lead Acetate— Hamburg, 24 cks.
Starch— Holland, 930 cs. Little & Johnston Germany, 680 Horne & Co. 300 C. Tennant, Sons, & Co.	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Paraffin Scale— Baltimore, 100 brls. Philadelphia, 600 100 cs. Anglo-American Oil Co., Ltd.	Limestone— Antwerp, 5 crts. 1 cs.
Saltpetre— Germany, 30 cks. J. Hall & Son 2 T. H. Lee	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Phosphate— Bonau, 100 t.	Paraffin Scale— New York, 60 brls.
Soda— Belgium, 400 c. A. J. Luke & Co. 800 G. A. Steel 80 Capes & Self	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Pitch— Marseilles, 74 brls.	Pitch— Antwerp, 30 cks.
Starch— Holland, 930 cs. Little & Johnston Germany, 680 Horne & Co. 300 C. Tennant, Sons, & Co.	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Potash— Hamburg, 10 cks.	Lead Acetate— Hamburg, 24 cks.
Saltpetre— Germany, 30 cks. J. Hall & Son 2 T. H. Lee	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Rosin— Savannah, Ga., 3,240 brls. T. Nickels & Co.	Limestone— Antwerp, 5 crts. 1 cs.
Soda— Belgium, 400 c. A. J. Luke & Co. 800 G. A. Steel 80 Capes & Self	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Silver Sulphide— Vera Cruz, 8 bxs. Elliot Metal Co.	Paraffin Scale— New York, 60 brls.
Starch— Holland, 930 cs. Little & Johnston Germany, 680 Horne & Co. 300 C. Tennant, Sons, & Co.	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Soap— Marseilles, 1 cs. M. Bell 25 Bostock & Co.	Pitch— Antwerp, 30 cks.
Saltpetre— Germany, 30 cks. J. Hall & Son 2 T. H. Lee	White Lead— Norway, 73 cks. R. W. Greeff & Co. Belgium, 10 J. L. Lyon & Co.	Bone Ash— San Nicolas, 60 bgs.	

LIVERPOOL.

Week ending December 2nd.

Albumen— Marseilles, 7 cs.	Aluminium— New York, 500 bxs.	Antimony Ore— Constantinople, 30 t.	Barytes— Antwerp, 50 bgs. 52 cks.	Benzine— Philadelphia, 1,000 brls.	Bone Ash— San Nicolas, 60 bgs.
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Potash Lye — Hamburg, 29 dms.	
Pyrites — Huelva, 1,832 t.	
Sodium Nitrate — Rotterdam, 19 cks.	
Starch — Antwerp, 80 cs. Rotterdam, 155	
Stearine — Rotterdam, 20 bls.	
Tallow — New York, 50 hds.	
Tartaric Acid — Rotterdam, 20 cks.	
Treacle — Sundswall, 100 brls.	Stott, Coker, & Co.
Waste Salt — Hamburg, 500 bgs. and qty.	
Whiting — Gothenburg, 200 bgs.	
Wood Pulp — Gothenburg, 2,347 bls. Christiania, 40 cs. Sundswall, 2,700 bls.	W. H. Ingram Stott, Coker, & Co.
Frano, 2,845 Bangor, 39,810 bds.	A. Wertheim & Co.
Stettin, 1,468 Sarpborg, 3,296 bls.	Kellner Partington Co., Ltd.
Zinc Oxide — Hamburg, 10 cks.	
Zinc Sulphate — Gothenburg, 10 cs.	

HULL.

Week ending December 4th.

Acids — Rouen, 1 ck.	Rawson & Robinson
Alizarine — Rotterdam, 13 cks. 58 brls.	W. & C. L. Ringrose
Asbestos — Reval, 46 bgs.	
Barytes — Amsterdam, 13 cks.	W. & C. L. Ringrose Bailey & Leatham, Ld.
Chemicals (otherwise undescribed) — Copenhagen, 1 ck.	Wilson, Sons, & Co., Ld.
Hamburg, 3	"
Colours — Hamburg, 20 cks.	Wilson, Sons, & Co., Ld.
Stettin, 12	Hutchinson & Son
Rotterdam, 4 bxs.	"
Riga, 965 pks.	Wilson, Sons, & Co., Ld.
Bremen, 54 cks.	W. & C. L. Ringrose
Rotterdam, 5	"
28 brls. 129 pks.	Wilson, Sons, & Co., Ld.
Antwerp, 10	"
Cream of Tartar — Rotterdam, 2 cks.	Hutchinson & Son W. & C. L. Ringrose
"	"
Farina — Stettin, 198 bgs.	Wilson, Sons, & Co., Ld.
Hamburg, 250	"
Glucose — Stettin, 200 bgs.	Wilson, Sons, & Co., Ld.
New York, 400 brls.	
Glue — Hamburg, 60 bgs.	Wilson, Sons, & Co., Ld.
Dunkirk, 112 cks.	Rawson & Robinson
Rouen, 11	"
6 bls. 40 bgs.	"
Lead Acetate — Hamburg, 43 cks.	Wilson, Sons, & Co., Ld.
"	Bailey & Leatham, Ld.
Manure — Aalesund, 20 bgs.	Wilson, Sons, & Co., Ld.

Ochre — Rouen, 79 cks.	Rawson & Robinson
Paint — Copenhagen, 36 dms.	Wilson, Sons, & Co., Ld.
Phosphate — Ghent, 2,700 bgs.	Wilson, Sons, & Co., Ld.
Pitch — Copenhagen, 50 brls.	Wilson, Sons, & Co., Ld.
Rosin — Bordeaux, 13 cks.	Sissons Brs & Co.
Wellington, 5,500 brls.	G. & J. Rawstorn, Ltd.
Savannah, 2,115	"
Saltpetre — Hamburg, 5 cks.	Wilson, Sons, & Co., Ld.
Soap — Copenhagen, 2 cs.	Wilson, Sons, & Co., Ld.
Riga, 24	"
Christiania, 25 bxs.	W. & C. L. Ringrose
Rotterdam, 1 ck.	"
Soda — Ghent, 250 bgs.	Wilson, Sons, & Co., Ld.
Starch — Amsterdam, 40 cs.	W. & C. L. Ringrose Veltmann & Co. Bailey & Leatham, Ld.
Bremen, 2,923	"
Antwerp, 80	"
Ghent, 122	Wilson, Sons, & Co., Ld.
Antwerp, 32	"
Tallow — Dunkirk, 102 cks.	Wilson, Sons, & Co., Ld.
Copenhagen, 1 brl.	"
New York, 50 tcs.	"
Tar — Wasa, 704 brls.	F. Durose & Co. W. & C. L. Ringrose
Rotterdam, 2	"
Amsterdam, 7 cks.	"
Tartaric Acid — Rotterdam, 8 cks.	W. & C. L. Ringrose
Treacle — New York, 649 brls.	Wilson, Sons, & Co., Ld.
Turpentine — Savannah, 2,500 brls.	G. & J. Rawstorn, Ltd.
"	2,920
Ultramarine — Bremen, 4 cks.	Hutchinson & Son
Rotterdam, 7	"
Waste Salt — Hamburg, 303 bgs.	
White Lead — Dunkirk, 51 cks.	Wilson, Sons, & Co., Ld.
Antwerp, 36	Bailey & Leatham, Ld.
Rotterdam, 30	W. & C. L. Ringrose Hutchinson & Son
"	"
Wood Pulp — Drontheim, 1,400 bls.	Wilson, Sons, & Co., Ld.
Bergen, 334 pks.	Bailey & Leatham, Ld.
Hamburg, 73 bls.	"
Zinc Ashes — Christiania, 24 cks.	Wilson, Sons, & Co., Ld.
Zinc Oxide — Rotterdam, 20 cks.	W. & C. L. Ringrose
Zinc White — Rotterdam, 20 cks.	Hutchinson & Son

GLASGOW.

Week ending December 9th.

Acetate of Lime — Montreal, 5 t.	
Alumina Sulphate — Rotterdam, 30 cks.	J. Rankine & Son
Arachide Oil — Rotterdam, 20 cks.	J. Rankine & Son

Barytes — Rotterdam, 133 pks. 55 cks.	J. Rankine & Son
Bone Meal — Bombay, 3,000 bgs.	
Borax (Ore) — New York, 352 bgs.	
Castor Oil — Marseilles, 440 brls.	
Chemicals (otherwise undescribed) — Hamburg, 6 cks.	
Colours — Hamburg, 4 cks.	2 cs. J. Rankine & Son
Rotterdam, 1	"
Cottonseed Oil — Baltimore, 75 brls.	
Cream of Tartar — Bordeaux, 10 cks.	
Dyestuffs — Alizarine— Rotterdam, 10 cks.	J. Rankine & Son
9 brls.	"
Aniline— Rotterdam, 3 cks.	J. Rankine & Son
3 cs.	"
Argols — Bordeaux, 60 cks.	
Cutch — Rangoon, 25 bxs.	P. Henderson & Co.
Madder — Rotterdam, 3 cks.	J. Rankine & Son
Shumac — Marseilles, 25 bgs.	
Gelatine — Hamburg, 1 cs.	
Glucose — Baltimore, 250 brls.	
Glue — Rotterdam, 40 bgs.	J. Rankine & Son
Infusorial Earth — Hamburg, 173 bgs.	
Magnesite — Hamburg, 1 ck.	
Manganese Chloride — Rotterdam, 6 cks.	J. Rankine & Son
Nickel Ore — Tchiao, 2,280 t.	Nickel Co.
Ochre — Baltimore, 490 brls. New York, 64	
Paint — Christiania, 120 kgs.	
Paraffin Scale — Rangoon, 244 bxs.	P. Henderson & Co.
Paraffin Wax — Baltimore, 300 brls.	
Phosphate — Antwerp, 1,000 bks.	
Pitch — Marseilles, 24 brls.	
Potash — Rotterdam, 59 cks.	J. Rankine & Son
Saltpetre — Hamburg, 73 cks. 6 brls. 60 kgs.	
Soap — Baltimore, 331 brls.	
Starch — Rotterdam, 85 cs.	J. Rankine & Son
Tallow — New York, 50 tcs.	
Tartar — Bordeaux, 21 cks.	
Treacle — Charente, 10 qr.-cks.	
Waste Salt — Hamburg, 100 bgs. 258 cks.	
White Lead — Rotterdam, 49 cks.	J. Rankine & Son
Whiting — Bordeaux, 100 bgs.	
Wood Pulp — Montreal, 3,885 bds. Gefle, 9,451 A. & A. Y. Mackay Christiania, 890	
Zinc Oxide — New York, 100 brls.	
Hamburg, 5 cks.	
Zinc White — Rotterdam, 160 cks.	J. Rankine & Son

TYNE.

Week ending December 4th.

Alum Earth — Hamburg, 26 cks.	Tyne S. S. Co.
Barytes — Rotterdam, 308 bgs.	Tyne S. S. Co.
Chemicals (otherwise undescribed) — Harburg, 600 t.	Clephans & Wiencke
Colours — Rotterdam, 1 cs.	Tyne S. S. Co.
Copper Oxide — Hamburg, 1 ck.	Tyne S. S. Co.
Glue — Hamburg, 20 bgs. 8 cks.	Tyne S. S. Co.
Ochre — Rouen, 212 cks.	J. Brown & Co.
Saltpetre — Hamburg, 2 cks.	Tyne S. S. Co.
Starch — Rotterdam, 54 cs.	Tyne S. S. Co.
Tartaric Acid — Rotterdam, 20 cks.	Tyne S. S. Co.
Wood Pulp — Christiania, 40 bls.	
Zinc Sulphate — Gothenburg, 32 bgs.	

GOOLE.

Week ending December 1st.

Acetic Acid — Rotterdam, 2 cs.	
Albumen — Hamburg, 2 cks.	
Alizarine — Rotterdam, 100 cks. 1 cs.	
Alkali — Calais, 18 cks.	
Aniline Dyes — Rotterdam, 151 cs. 600 cks.	
Antimony — Boulogne, 1 ck.	
Caoutchouc — Boulogne, 3 pks.	
Chemicals (otherwise undescribed) — Hamburg, 1 ck. 5 cs.	
Colours — Rotterdam, 10 cks. Hamburg, 20 3 cs.	
Dyestuffs (otherwise undescribed) — Boulogne, 29 cks. 5 cs. 157 pks.	
Farina — Hamburg, 610 bgs. Delfsyzyl, 500	
Glue — Boulogne, 10 pks. Antwerp, 6 cks.	
Indigo — Rotterdam, 2 cks.	
Lime — Hamburg, 1 ck.	
Logwood — Hayti, 502 t. Isle de Paedras, 530	
Ochre — Dunkirk, 95 cks.	
Phosphate of Lime — Hamburg, 7 cks.	
Potash — Rotterdam, 2 cks.	
Calais, 13	17 drs.
Dunkirk, 20	90 dms.
Hamburg, 20	
Potassium Carbonate — Hamburg, 41 cks.	
Pyrites — Huelva, 2,234 t.	
Saltpetre — Rotterdam, 85 bgs. Hamburg, 23 cks.	40 kgs.
Starch — Ghent, 64 bxs.	
Tartar — Rotterdam, 8 cks. Hamburg, 10	
Varnish — Hamburg, 1 ck.	
Waste Salt — Hamburg, 157 t. 260 cks.	
Zinc Oxide — Antwerp, 8 cks.	

GRIMSBY.
Week ending December 4th.
Albumen—
Hamburg, 13 cks.
Caoutchouc—
Hamburg, 3 cs.

Antwerp, 3
Chemicals (otherwise undescribed)
Hamburg, 16 cks. 3 cs.
Colours—
Antwerp, { 21 cks. 113 pks.
Dieppe, 9 14 cs.

Rotterdam, 9
Hamburg, 11 14 4
Farina—
Hamburg, 50 bgs.
Glue—
Dieppe, 7 cks.

Lamp Black—
Malmo, 53 cks.
Pitch—
Hamburg, 3 cs.
Soap—
Malmo, 1 bx.

EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending December 8th.

Acetic Acid—
Canterbury, 20 cs. £38
Alcids—
Sydney, 3 cs. £16
Alkali—
Boston, 5 c. £32
New York, 1 t. 12
Ammonia—
Cologne, 32 dms. £257
Ammonium Carbonate—
Rio de Janeiro, 1 t. 9 c. £55
Calcutta, 4 cks. 11
Dunedin, 10 16
Ammonium Chloride—
Cologne, 1 t. 12 c. £49
Samsoun, 1 31
Batoum, 2 63
Ammonium Sulphate—
Demerara, 16 t. £135
Mauritius, 50 457
Bremen, 200 1,800
Rotterdam, 50 450
Hong Kong, 50 1 c. 467
Charente, 76 6 649
Hamburg, 339 2,960
Anhydrous Ammonia—
Sydney, 75 cs. £188
Bisulphite of Lime—
Calcutta, 8 t. 16 c. £128
Borax—
Rotterdam, 12 t. 16 c. £186
Brisbane, 1 15
Carbolic Acid—
Hio, 60 dms. £186
Dusseldorf, 161 cks. 1,326
Colombo, 4 5
Yokohama, 60 186
Rotterdam, 47 168
Philadelphia, 10 90
Sydney, 25 10
Carbonic Acid Gas—
Jersey, 32 tubes £13
Pt. Elizabeth, 3 24
Caustic Potash—
Wellington, 10 c. £14
Caustic Soda—
Durtan, 1 t. £22
Cape Town, 1 22
Dunedin, 10 3 c. 60
Wellington, 2 4 29
E. London, 1 1 25
Melbourne, 2 6 42
Lyttelton, 6 5 45
Chemicals (otherwise undescribed)
Boulogne, 4 cs. 10 pks. £121
B. Ayres, 20 26
Brussels, 5 kgs. 29
Rotterdam, 4 cks. 6 82
Yokohama, 13 61
Cologne, 1 30
Hamburg, 1 4 56
Madras, 1 t. 13 c. 52
Dunedin, 4 10
Calcutta, 32 cs. 111
Auckland, 11 pks. 35
New York, 10 dms. 15
Antwerp, 22 cks. 293
Dunkirk, 15 200
Durban, 10 cs. 124
Paris, 6 15
Citric Acid—
Rotterdam, 1 t. £114
Reval, 2 223
B. Ayres, 2 c. 14
Cape Town, 9 53
Oporto, 5 cks. 45
Vera Cruz, 2 12
Coal Products—
Alizarine
Boston, 40 cks. £451
Aniline Oil
New York, 31 dms. £1,050
Aniline Salts
New York, 50 cks. £260

Anthracene
Cologne, 112 cks. £158
Dusseldorf, 360 1,700
Benzol
Le Treport, 50 cks. £180
Rotterdam, 100 420
Creosote
Norfolk, Virg., 475 cks. £300
Huelva, 3,459 brls. 190
Naphtha
Christchurch, 6 cs. £8
Boston, 5 cks. 22
Naphthaline
Hamburg, 6 cks. £55
Pitch
Dunedin, 14 pks. £8
Antwerp, 2,030 t. 2,462
New York, 150 cks. 47
Sables d'Olonne, 660 700
Durban, 120 kgs. 9
Dunkirk, 1,065 1,279
Wellington, 4 pks. 5
Rangoon, 12 8
Huelva, 155 t. 159
Pyridine
Hamburg, 2 dms. £76
Tar
Steintin, 100 brls. £60
Pt. Elizabeth, 100 dms. 12
Natal, 115 16
Wellington, 30 5
Toluol
Rotterdam, 50 cks. £335
Coal Products (otherwise unles.)
New York, 33 cks. £400
Cape Town, 10 7
Boston, 7 34
Rangoon, 20 brls. 14
Copper sulphate—
Batoum, 20 t. £302
Gream of Tartar—
Pt. Elizabeth, 4 c. £19
Wellington, 3 11
Canterbury, 1 t. 77
Dunedin, 10 38
Sydney, 1 10 116
Disinfectants—
Pt. Elizabeth, 28 cs. £13
Calcutta, 15 cks. 16
Singapore, 35 dms. 21
Colombo, 40 pks. 27
Cape Town, 105 108
E. London, 11 13
Lime—
Pt. Said, 5 t. £15
Manure—
Yokohama, 1 t. £31
Adelaide, 250 653
Jersey, 95 509
New York, 4 26
Nitric Acid—
Madras, 19 c. £27
Oxalic Acid—
Hio, 1 t. £32
Phosphorus—
Wellington, 8 cs. £81
Calcutta, 3 c. 26
Potash—
B. Ayres, 2 t. 3 c. £37
Potassium Cyanide—
Delagoa Bay, 6 t. 12 c. £425
Durban, 2 13 170
Fremantle, 7 18 610
Algoa Bay, 2 391
Calcutta, 6 27
Sydney, 3 12 210
Melbourne, 3 250
Potassium Prussiate—
Philadelphia, 20 cks. £295
Saltpetre—
Rio de Janeiro, 3 t. 12 c. £78
Wellington, 10 10
Santos, 2 7 49
Oporto, 3 4 58
Sheep Dip—
Durban, 11 c. £55
Auckland, 2 t. 14 100
Pt. Elizabeth, 5 12 125
500 dms. 20
Brisbane, 300 pks. 312

Wellington, 8 cks. 22
Sydney, 1 19 95
M. Video, 6 11 150
B. Ayres, 146 9 4,430
Lyttelton, 400 cs. 700
Silver Nitrate—
Bombay, 1 cs. £27
Soda Ash—
Rio de Janeiro, 25 t. 8 c. £109
Sodium Bicarbonate—
Brisbane, 10 c. £7
Sodium Sulphate—
Ghent, 60 t. £90
Sulphite of Lime—
Cape Town, 2 t. 10 c. £35
Sulphur—
Pt. Elizabeth, 4 t. 9 c. £34
Wellington, 5 30
Sulphuric Acid—
Durban, 10 cs. £18
Tartaric Acid—
Adelaide, 10 c. £64
Wellington, 5 28
Auckland, 5 32
Durban, 3 19
Sydney, 10 58

LIVERPOOL.

Week ending December 8th.

Acetic Acid—
Lisbon, 1 t. 3 c. 1 q. £7
Alum—
Smyrna, 9 t. 1 c. £48
Madras, 18 2 2 q. 98
Inebeli, 1 2 5
Syra, 2 19 3 14
Volo, 1 3 5
Bourgas, 2 11 2 12
Piræus, 6 11 1 30
Sydney, 15 5
M. Video, 1 2 5
Calamata, 7 2 3 34
Salonica, 16 10 83
Guayaquil, 3 8 19
Corunna, 1 6 5
Lima, 6 2
Ammonium Carbonate—
Barcelona, 1 t. 8 c. £60
Valparaiso, 10 14
Rotterdam, 40 1 19 q. 57
Mannos, 6 11
Yokohama, 2 5 71
Lisbon, 12 17
Genoa, 3 14 132
Copenhagen, 1 20
Ammonium Chloride—
Melbourne, 1 t. £18
Sydney, 19 c. 17
H. Ayres, 1 5 41
Syra, 15 22
Trieste, 4 19 3 q. 149
Naples, 4 6
Smyrna, 12 20
Barcelona, 1 8 27
Wiborg, 6 27
Lisbon, 15 29
Genoa, 1 2 31
Alexandria, 1 10 47
Corunna, 5 8
Ammonium Sulphate—
Sourabaya, 102 t. 17 c. 2 q. £823
Gd. Canary, 28 5 255
Philadelphia, 14 10 2 134
Antwerp, 19 4 170
Hamburg, 5 45
Venice, 10 85
Naples, 14 4 108
Teneriffe, 10 90
Demerara, 110 990
Las Palmas, 25 228
Malaga, 11 1 6
Ghent, 100 820
Genoa, 105 18 3 910
Valencia, 45 3 1 402
Barium Sulphate—
Portland, O., 10 t. 17 c. £30

Bleaching Powder—
Ancona, 10 cks. 106 pks.
Baltimore, 298
Boston, 481
Calcutta, 103
Cape Town, 40 bxs.
Genoa, 10 crts.
Gothenburg, 6
Lisbon, 32 brls.
Maranham, 10
Nantes, 14
Naples, 35
Newport News, 66
Philadelphia, 307
New York, 559 30
Rouen, 29
San Sebastian, 60
Boric Acid—
Havre, 11 c. 2 q. £16
Montreal, 1 t. 14 2 47
Borax—
Rotterdam, 9 t. 19 c. 2 q. £130
Antwerp, 10 11
Hamburg, 1 10 24
Constantinople, 2 32
Alexandria, 1 16
Montreal, 3 3 3 51
Stamboul, 8 6
Dunedin, 1 15
Barcelona, 7 4 105
Rosario, 2 10 36
Genoa, 2 6 2 25
Natal, 1 6 20
Sydney, 11 1 8
Copenhagen, 6 4 3 103
Calcium Chloride—
Sydney, 10 t. 4 c. £23
Genoa, 2 2 6
Odessa, 25 1 50
Carbolic Acid—
Portland, 5 c. £16
Borcadon, 20 cs. 8
Antwerp, 8 31
Yokohama, 2 10 154
Carbon Bisulphide—
Sydney, 4 t. 16 c. 2 q. £12
Caustic Potash—
Sydney, 2 t. £60
Caustic Soda—
Alexandria, 38 dms.
Ancona, 70
Bahia, 70
Baltimore, 150
Barbadoes, 50
Bari, 89
Batavia, 150
Bilbao, 36
Bombay, 100
Bordeaux, 20
Boston, 100
Braila, 30
Calcutta, 18
Cape Town, 18
Constantinople, 15 12 brls.
Corunna, 73 cs.
Fairwater, 15
Genoa, 249
Halifax, 35
Hio, 612
Havana, 60
Hong Kong, 4 cks.
Kingston, Ja., 15
La Guayra, 20
Leghorn, 21
Libau, 95
Malaga, 226
Mar-eilles, 20
Matanzas, 75
Mauritius, 20
Naples, 33
N. Orleans, 151
Odessa, 35
Oporto, 39
Philadelphia, 200
Piræus, 63 20
Portland, M., 100
Natal, 7
New York, 873 100 bxs.
Pt. Natal, 215
Puerto Cabello, 15

Rio de Janeiro,	10	
Rotterdam,	118	32 pks.
Rouen,	50	
San Sebastian,	28	
Seville,	24	
Sourabaya,	40	
Sydney,	146	
Talcahuano,	25	
Trieste,	120	
Tunis,	35	
Valencia,	15	
Venice,	10	
Vera Cruz,	25	
Volo,	40	
Wellington,	38	

Chemicals (otherwise undescribed)

Newcastle, N.Z.,	2 t.	£48
Salonica,	1 c.	37
New York,	9 10	285
Gothenburg,	1 12	40
Yokohama,	5	147
Alexandretta,	2 8	74
Calcutta,	41 7	111
Larnaca,	2	3
Marseilles,	10	15
Montreal,	3 12 1 q.	18
Genoa,	2 11	75
Philadelphia,	13 5	402

China Clay—

Baltimore,	100 cks.	
Boston,	926	
Rio de Janeiro,	56 brls.	

Citric Acid—

Reval,	2 t.	£210
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Cobalt Nitrate—

Nagasaki,	4 c. 3 q.	£117
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Coal Products—

Alizarine	60 kgs.	
Aniline Colours		
Melbourne,	9 pks.	
New York,	17 cks.	
Portland, M.,	2 kgs. 1 cs.	
Aniline Oil		
Barcelona,	34 pks.	
Aniline Salts		
Boston,	47 cks. 32 cs.	
Naphtha		
Melbourne,	120 dms.	
Pitch		
Marseilles,	151 t.	
Nantes,	161	
Tar		
Hamburg,	255 brls.	
Mollendo,	200 dms.	

Copper Sulphate—

Ancona,	24 t. 17 c.	£378
M. Video	5 19 3 q.	92
Vigo,	12 19 3	209
Marseilles,	9 19	159
Tampico,	18	1 304
Chalcis,	3 4 2	50
Corral,	1	16
Brindisi,	7 6	131
Constantinople,	5	80
Naples,	5 1	79
Madras,	2	33
Halifax, N.S.,	2 14 1	11
Catania,	2	1 32
Bari,	14 6 3	231
Taranto,	1 19	30
Messina,	1 7 2	22
Nantes,	4 19	80
Syra,	3 1 1	47
Alexandretta,	1	16
Conthou,	2	31
Iquique,	12 2 3	184
Varna,	2	33
Pyrgos,	6 1 3	93
Melbourne,	17 10	275
Odessa,	8	128
Rio de Janeiro,	15 2	12
Corunna,	1 15	20
Genoa,	10 18 1	172
Bordeaux,	99 14 2	1,581
Algers,	35 17 3	566
Piræus,	8 13	142
Salonica,	1 9	23

Copperas—

Vera Cruz,	1 t. 8 c.	£4
Calamata,	4 17	9
Sydney,	10	23
Lima,	4 12 3 q.	12

Disinfectants—

Santa Cruz,	10 c.	£16
Alexandria,	4 cs.	16
Melbourne,	5	25

Dried Blood—

Las Palmas,	86 bgs.	£62
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Guanos—

Seville,	25 t.	£156
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Iron Oxide—

New York,	6 t.	£75
Boston,	5 12 c.	24

Lime—

Conakry,	22 t.	£42
Montserrat,	2 7 c.	9
Lahon,	4 10	6
Pernambuco,	10 10	24

Magnesia—

Colon,	3 cs.	
Lisbon,	10 10 fcs.	

Magnesium Carbonate—

Vera Cruz,	2 c. 1 q.	£5
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Magnesium Chloride—

Genoa,	3 c.	£1
Nantes,	5 t. 2 2 q.	12

Magnesium Sulphate—

Alexandria,	30 kgs.	
Oporto,	8 cks.	

Manganese Oxide—

Corunna,	2 c. 2 q.	£2
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Manure—

Teneriffe,	10 t.	£41
Bordeaux,	6 16 c.	23
Las Palmas,	3	10
Gd. Canary,	5	45

Mineral White—

Tampico,	16 cks.	
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Paint—

Accra,	22 pks.	
Algiers,	28 dms. 7 tins	
Antwerp,	15 kgs.	8 cks.

Painters' Colours—

Bahia,	2 pks	
B. Ayres,	55	6 cks.
Natal,	29 2 bxs.	
New York,	29 4 dms.	
Rosario,	130	
Sydney,	479	
Talcahuana,	40 36 cs.	
Valparaiso,	10 kgs.	
Victoria, B.C.,	10 kgs.	
W.C.A. 50		
Paraffin Wax—		
Fiume,	16 cs.	
Genoa,	180 bgs.	
Leghorn,	246	
New York,	2	
Palemo,	10	
Rouen,	25	
Smyrna,	20 30	

Phosphorus—

Vera Cruz,	2 c. 3 q.	£22
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Potash—

New York,	1 t. 18 c.	£68
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Potash Salts—

Guaymas,	12 t. 9 c. 3 q.	£980
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Potassium—

La Libertad,	2 kgs.	£9
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Potassium Bicarbonate—

New York,	2 t. 5 c.	£58
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Potassium Bichromate—

La Libertad,	5 kgs.	£10
B. Ayres,	8 c.	17
Oporto,	1 t. 10	64
Constantinople,	1 1	39
Salonica,	7	13
Sydney,	3 2 q.	6

Potassium Carbonate—

Rio de Janeiro,	11 c.	£12
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Potassium Chlorate—

Gothenburg,	5 t.	£163
Bari,	2	66

Calcutta,	1	33
Hiogo,	48 10 c.	1,367
St. Petersburg,	10 5	360
Lisbon,	12	440
Hamburg,	1 5	46
Rotterdam,	1	36
Philadelphia,	3 15	109
Sydney,	1 10	40
Copenhagen,	9	303
Konigsberg,	3 15	113

Potassium Cyanide—

Melbourne,	4 t.	£400
Sydney,	2 c.	10
New York,	10 10	957
Madras,	2 11	250

Potassium Prussiate—

Genoa,	19 c. 3 q.	£50
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Salt—

Ambriette,	11 t. 3 c.	
Amsterdam,	195	
Anamaboe,	10 12	
Antwerp,	362 14	
Baltimore,	65	
Boma,	10	
Boston,	100 1	
B. Ayres,	35 18	
Calcutta,	1,294 3	
Cape Lahon,	25	
Conakry,	5	
Copenhagen,	608 17	
E. London,	87 16	
Dunedin,	10	
Fuca Fuca,	20	
Gd. Bassam,	25	
Guayaquil,	1 1	
Halifax,	20	
Lagos,	37 10	
Loango,	10	
Matadi,	25	
Melbourne,	145	
Noqui,	20	
Portland, Me.,	24 10	
Muculla,	8	
Newcastle,	75	
N. Orleans,	150	
New York,	105	
Punta Arenas,	20 cs.	
Rangoon,	818	
Rio de Janeiro,	1 100	
Rotterdam,	150	
St. John's,	100	
Sherbro,	50	
Sydney,	220	
Trinidad,	44 6	
Wellington,	35	

Salt Cake—

Antwerp,	100 t.	£125
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Saltpetre—

Syra,	2 t. 17 c.	£58
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Sheep Dip—

Natal,	14 c. 2 q.	£25
B. Ayres,	27 t. 13 2	801
Bahia Blanca,	2 16 3	247
Punta Arenas,	4 10	100
M. Video,	2 11 1	56

Soap—

Accra,	300 bxs.	
Alexandria,	18	
Algoa Bay,	100	
Amsterdam,	100	
Antwerp,	1,800 cs.	
Barbadoes,	200	
Belize,	300	
Bombay,	1,939 pks.	
B. Ayres,	2	
Calcutta,	55 40 dms.	
Callao,	50	
Cape Town,	1,100	
Christchurch,	300	
N.Z.,		
Conakry,	12	
Demerara,	466	
E. London,	500	
Gibraltar,	379	
Grenada,	300	
Guayaquil,	400	
Hamburg,	375 pks.	
Iquitos,	13	
Karachi,	44	
Kingston, Jam.,	4	
Lagos,	271	
Las Palmas,	2,800	
Opobo,	2,800	
Patras,	1	
Penang,	104	
Piræus,	10	
Mossel Bay,	500	
Pt. Natal,	497	
Punta Arenas,	25	
St. John's,	135	
St. John's, Nfld.	60	
Salonica,	120	
Teneriffe,	650	
Trinidad,	2	
Valparaiso,	4	

Soda Alkali—

Canterbury, N.Z.,	20 cks.	
E. London,	200 bgs.	
Lisbon,	132 brls.	
New York,	10	

Soda Ash—

Antwerp,	1,890 bgs.	
Baltimore,	78 cks.	
Bombay,	50 kgs.	
Boston,	1,016 bgs.	63
B. Ayres,	150	
Cadiz,	6 brls.	
Canea,	40	
Copenhagen,	1,100	
E. London,	80 kgs.	
Ghent,	134 bgs.	
Hamburg,	80	
Hiogo,	575	
Konigsberg,	100	
New York,	991 40 50 dms.	
Oporto,	and qty.	15 cks.
Philadelphia,	3,720 106 tcs.	
Piræus,	25 kgs.	
Portland, Me.,	300 brls.	
Rio de Janeiro,	50	
Rotterdam,	350	
Tampico,	1,167	
Venice,	58	
Yokohama,	100 18	
	104	

Soda Crystals—

Bahia,	67 kgs.	
Boston,	280 brls.	
B. Ayres,	200	
Malta,	40	
Philadelphia,	280	
Portland, M.,	50 100 bgs.	
New York,	140	
Pt. Said,	30 cks.	
Shanghai,	15	
Singapore,	14	

Sodium Bicarbonate—

Alexandretta,	10 kgs.	
Alexandria,	25 brls.	
Alicante,	70	
Ancona,	20 15 cks.	
Antwerp,	10	
Bombay,	250 5	
Bordeaux,	70	
Brindisi,	50 10	
Calcutta,	520	
E. London,	40	
Genoa,	50	
Hiogo,	500	
Hong Kong,	14	
Odessa,	60	
Naples,	72	
Rouen,	190 7 4	
Sydney,	200	
Tampico,	50	
Trieste,	10	
Tunis,	10	
Valencia,	10	
Yokohama,	700	

Sodium Chlorate—

Boston,	140 brls.	
Rotterdam,	50 bgs.	

Sodium Chloride—

Antwerp,	30 kgs.	
Philadelphia,	100	

Sodium Hyposulphite—

Lisbon,	20 cks.	
---------	---------	--

Sodium Silicate—

Bilbao,	35 brls.	
Nantes,	8 dms.	

Starch—

Copenhagen,	1 ck.	
-------------	-------	--

Sulphur—

Demerara,	15 t. 1 c. 2 q.	£49
Boston,	175 4	714

Sulphuric Acid—

Maranham,	1 t. 15 c. 2 q.	£20
Valparaiso,	16	0

Superphosphates—

MANCHESTER.

Week ending December 8th.

Alum —	
Bombay,	77 brls.
Ammonium Carbonate —	
Copenhagen,	23 cks.
Aniline Colours —	
Hamburg,	20 kgs.
Rotterdam,	1 ck.
Aniline Oil —	
Hamburg,	1 ck. 4 dms.
Rouen,	5
Aniline Salts —	
Rotterdam,	350 t.
Carbolic Acid —	
Rouen,	10 cks. 154 brls.
Chemicals (otherwise undescribed)	
Rotterdam,	6 cks.
Rouen,	5
Stockholm,	41
Cottonseed Oil —	
Susa,	45 brls.
Dyestuffs (otherwise undes.) —	
Larnaca,	1 prcl.
Farina —	
Rotterdam,	100 sks.
Gelatin —	
Bombay,	1 ck.
Glue —	
Bombay,	16 cks.
Rotterdam,	39
Linseed Oil —	
Tunis,	5 brls.
Magnesia —	
Tunis,	16 tcs.
Magnesium Sulphate —	
Gothenburg,	40 bgs.
Myrbane —	
Antwerp,	1 dm.
Napthol —	
Antwerp,	4 kgs.
Paraffin Wax —	
Rouen,	5 bls.
Rosin —	
Bombay,	100 brls.
Soap —	
Bombay,	3 cks.
Tallow —	
Rotterdam,	42 cks.
Bombay,	14 brls.
Tar Oil —	
Antwerp,	15 dms.
Zinc Chloride —	
Rotterdam,	1 ck.

HULL.

Week ending December 4th.

Alkali —	
New York,	200 dms.
Reval,	91 cks.
Abo,	15
Ammonium Sulphate —	
Dunkirk,	47 bgs.
Ghent,	100
Stettin,	1,027
Antimony —	
Danzig,	10 cks.
Barium Carbonate —	
Stettin,	6,840 c.
Bleaching Powder —	
Boston, U.S.A.,	100 cks.
Helsingfors,	1
Carbolic Acid —	
Amsterdam,	138 cks.
Caustic Soda —	
Wyburg,	47 cks.
Chemicals (otherwise undescribed)	
Abo,	10 brls.
Bergen,	2 cks.
Copenhagen,	1 56 pks.
Christiania,	1 4 cs.
Danzig,	6 8 725 pks.
Gothenburg,	15 53
Hamburg,	10 kgs. 5
Helsingfors,	13 cks. 1
Konigsberg,	2 10 100
Reval,	2 72
Rotterdam,	9 10
Stockholm,	31
Cottonseed Oil —	
Antwerp,	253 c.
Amsterdam,	1,689
Bremen,	40
Copenhagen,	103
Christiansand,	35

Danzig,	16
Gothenburg,	120
Hamburg,	848
Harlingen,	200
Rouen,	1,423
Rotterdam,	1,434
Stettin,	201
Stockholm,	259
Creosote —	
Gothenburg,	16 cks.
Hamburg,	10
New York,	500
Dyestuffs (otherwise undescribed)	
Boston, U.S.A.,	10 cks. 5 kgs.
Danzig,	4 cs.
Hamburg,	1
New York,	20
Reval,	1 10 dms.
Linseed Oil —	
Amsterdam,	203 c.
Copenhagen,	24
Christiania,	17
Christiansand,	35
Drontheim,	134
Ghent,	7
Stockholm,	35
Manure —	
Danzig,	239 t.
Mineral White —	
Antwerp,	32 cks.
Painters' Colours —	
Antwerp,	1 ck. 3 cs. 60 pks.
Amsterdam,	50 2
Copenhagen,	12 3
Christiania,	43 3
Danzig,	3
Drontheim,	20 dms.
Gothenburg,	10
Ghent,	20
Hamburg,	2 6
Helsingfors,	8
New York,	70
Rouen,	18 12 7
Reval,	3
Rotterdam,	3 10 3
Stockholm,	5
Pitch —	
Antwerp,	247 t.
Dunkirk,	247
Reval,	1 cs.
Soap —	
Christiania,	50 cs.
Gothenburg,	2
Tallow —	
Rotterdam,	5 cks.
Tar —	
Amsterdam,	6 cks.
Bremen,	10
Copenhagen,	20
Hamburg,	2
Rotterdam,	3
Stockholm,	2
Yarnish —	
Christiania,	1 ck. 2 cs.
Hamburg,	1
Harlingen,	4
Stockholm,	1

GLASGOW.

Week ending December 9th.

Ammonium Sulphate —	
Valencia,	361 t. 9½ c.
Hamburg,	50 13
Rotterdam,	61 1
Bleaching Powder —	
Calcutta,	91 t. 18¼ c.
Caustic Soda —	
Singapore,	4 t. 10½ c.
Chemicals (otherwise undescribed)	
Rotterdam,	£920
Coal Products —	
Benzine	
France,	£435
Benzol	
France,	£200
Creosote Oil	
Christiania,	£6
France,	3,075
Pitch	
France,	£38 15s.
U.S.A.,	£180
Tar	
Trinidad,	£8 15s.
Tar and Pitch	
Bombay,	£115
Coal Products (otherwise undes.) —	
Rotterdam,	£665
Copper Sulphate —	
Melbourne,	£21 10s.

Dissolved Bones —	
Jersey,	28 t. 18 c.
Dyestuffs (otherwise undes.) —	
Melbourne,	£120
Rotterdam,	5 t.
Extracts —	
N. Zealand,	£128
Glue —	
Dunedin,	£48
Iodine —	
Rotterdam,	£250
Lead Acetate —	
Paris,	£100
Bombay,	69
Lead Nitrate —	
Canada,	£28
Linseed Oil —	
B. Ayres,	3 t. ½ c.
Christiania,	1 1
Auckland,	10½
Kingston,	3 13¼
Trinidad,	1 9¾
Litharge —	
Bombay,	£20
Logwood —	
Pt. Lyttelton,	£35
Auckland,	59
Magnesium Sulphate —	
Christiania,	£31
Manganese Oxide —	
U.S.A.,	£210
Paint —	
Calcutta,	£201
„	qty.
Havana,	83
Natal,	101
Painters' Colours —	
Adelaide,	qty.
Melbourne,	„
Sydney,	„
Pt. Elizabeth,	„
Auckland,	„
Dunedin,	„
Kingston,	£7 10s.
New Plymouth,	„
Port of Spain,	25
Trinidad,	30 16
Wellington,	„
Paraffin Wax —	
Barcelona,	£579
Rouen,	£36 10s.
Christiania,	£60
Skien,	30
Potassium Bichromate —	
Barcelona,	£593
Rotterdam,	146
Bombay,	138
N. Zealand,	21
Potassium Prussiate —	
Barcelona,	£104
Potassium Sulphate —	
Jersey,	15 t.
Salt —	
Christiania,	10 c.
Sheep Dip —	
B. Ayres,	£191
Dunedin,	619
Soap —	
Barcelona,	3 t. ½ c.
Canterbury,	1 6
Kingston,	5
Trinidad,	10 17
Sodium Bichromate —	
Barcelona,	11 t. 15¼ c.
Rouen,	15 6
Bombay,	1 13½
Starch —	
Rotterdam,	6 c.
Superphosphates —	
Jersey,	415 t. 10 c.
Tallow —	
Rotterdam,	73 t. 9½ c.
Treacle —	
Christiania,	1 t. 6¼ c.
White Lead —	
Natal,	£23
Dunedin,	45

TYNE.

Week ending December 4th.

Alum Waste —	
Copenhagen,	80 t. 4 c.
Aarhus,	10 5
Alumina Hydrate —	
Antwerp,	5 t. 3 c.
Ammonium Sulphite —	
Hamburg,	101 t. 2 c.

Anthracene —	
Rotterdam,	53 t. 4 c.
Antimony —	
Antwerp,	1 t.
Hamburg,	31 10 c.
Rotterdam,	5 10
Barium Binoxide —	
Amsterdam,	5 t. 14 c.
Barium Carbonate —	
Odense,	10 c
Konigsberg,	3 t.
Bleaching Powder —	
Amsterdam,	16 t. 11 c.
Antwerp,	66 15
Hamburg,	3 6
Copenhagen,	5 6
Rotterdam,	24 11
Konigsberg,	2 3
Carbolic Acid —	
Amsterdam,	2 17 c.
Caustic Soda —	
Hamburg,	2 t.
Aarhus,	1 3 c.
Konigsberg,	25 16
Colours —	
Copenhagen,	3 c.
Magnesia —	
Antwerp,	3 t. 4 c. 3 q.
Hamburg,	11
Rotterdam,	11
Paint —	
Antwerp,	2 t. 10 c.
Hamburg,	5
Rotterdam,	1 2
Soda —	
Amsterdam,	30 t.
Rotterdam,	10
Aarhus,	12 15 c.
Soda Ash —	
Copenhagen,	5 t. 9 c.
Konigsberg,	155 17
Sodium Sulphate —	
Aalborg,	2 t. 10 c.
White Lead —	
Copenhagen,	1 t.

GOOLE.

Week ending December 1st.

Alkali —	
Rotterdam,	1 ck.
Benzol —	
Dunkirk,	1 ck.
Hamburg,	75
Boulogne,	75
Chemicals (otherwise undescribed)	
Hamburg,	10 drs.
Coal Products (otherwise undes.) —	
Amsterdam,	1 ck.
Boulogne,	3 1 cs. 5 dms.
Rotterdam,	89 1
Colours —	
Boulogne,	1 ck.
Ghent,	2
Rotterdam,	1 1 cs. 2 dms.
Dyestuffs (otherwise undescribed)	
Amsterdam,	1 ck.
Ghent,	1 cs.
Manure —	
Antwerp,	190 bgs.
Boulogne,	135
Hamburg,	596
Pitch —	
Antwerp,	685 t.
Dunkirk,	200
Soap —	
Dunkirk,	1 cs.

GRIMSBY.

Week ending December 4th.

Alkali —	
Hamburg,	10 cs.
Aniline —	
Dieppe,	3 cs.
Chemicals (otherwise undescribed)	
Rotterdam,	91 drs.
Coal Products (otherwise undes.) —	
Dieppe,	54 brls. 3 pks.
Rotterdam,	24 cks.
Hamburg,	3 brls.
Colours —	
Antwerp,	5 cks. 3 cs. 5 pks.
Dieppe,	10 1 dm.
Hamburg,	3 2
Port au Prince,	8

PRICES CURRENT.

WEDNESDAY, DEC. 15TH, 1897.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary

Acids:—

		£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/9	&	8/9
Glacial				39/-
Arsenic S.G., 2000°		1	4	0
Fluoric	per lb.	0	0	3½
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0	10
(Cylinder), 30° Tw.		0	3	0
Nitric 80° Tw.	per lb.	0	0	1½
Nitrous		0	0	1½
Oxalic	nett	0	0	3½
Phosphoric, 1750°		0	0	11½
Picric		0	0	11
Sulphuric (fuming 50 %)	per ton	15	10	0
(monohydrate)		5	10	0
(Pyrites, 168°)		3	0	0
(free from arsenic, 145°)		1	5	0
Sulphurous (solution) S.G. 1025		1	7	6
Tannic (pure)	per lb.	0	1	2½
Tartaric		0	1	1½
Arsenic, white powdered	nett per ton	21	7	6
Alum (loose lump)		4	10	0
Alumina Sulphate (pure)		4	2	6
Aluminoferic		2	3	6
Aluminium (Ingot metal 98/99¾ %)	nett	148	0	0
Ammonia, Anhydrous	per lb.	0	1	3
" 880=28° B.		0	0	2½
" =24° B.		0	0	1½
" Carbonate	nett	0	0	3
" Muriate	per ton	18	0	0
" (sal-ammoria:) 1st & 2nd	per cwt.	33/-	&	31/-
" Nitrate	per ton	31	0	0
" Phosphate	per lb.	0	0	3½
" Sulphate (grey) London	per ton	9	0	0
" (grey) Hull		9	0	0
Aniline Oil (pure)	per lb.	0	0	7½
Aniline Salt		0	0	6½
Antimony	per ton	30	5	0
" (tartar emetic)	per lb.	0	0	8
" (golden sulphide)		0	0	10
Barium Chloride	per ton	6	15	0
" Carbonate (native)		3	10	0
" Sulphate (native levigated)		42/6	to	65/-
Bleaching Powder, 35 %	nett	6	2	6
" Liquor, 7 %		3	10	0
Bisulphide of Carbon		12	0	0
Chromium Acetate (crystal)	per lb.	0	0	6
Calcium Chloride	per ton	2	5	0
China Clay (at Runcorn) in bulk		15/-	to	25/-

Coal Tar Products and Dyes:—

Alizarine (artificial) 20 %	nett per lb.	0	0	6¾
Magenta		0	3	0
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0	0	6
Benzol, 90's	per gallon	0	1	8
" 50/90		0	1	10
Carbolic Acid (crude 60°)	per gallon	0	2	0
(crystallised 40°)	per lb.	0	0	7½
(liquid 95/97 %)	per gallon	0	1	0
Creosote (ordinary)		0	0	2½
(filtered for Lucigen light)		0	0	3
Crude Naphtha 30 % @ 120° C.		0	0	9½
Grease Oils, 22° Tw.	per ton	2	15	0
Pitch, f.o.b. Liverpool or Garston		1	0	0
Solvent Naphtha, 90 % at 160°	per gallon	0	1	8
Copper	per ton	48	5	0
" Sulphate		16	5	0
" Oxide (copper scales)		44	10	0
Glycerine (crude)		22	10	0
(distilled S.G. 1250°)		37	10	0
Iodine	nett, per oz.	0	0	7½
Iron Sulphate (copperas)	per ton	1	10	0
" Sulphide (antimony siag)		2	0	0
Lead (sheet)		13	15	0
" Litharge Flake (ex ship)		16	0	0
" Acetate (white)		23	0	0
" brown		17	0	0
" Carbonate (white lead) pure		17	0	0
" Nitrate		20	0	0

Lime, Acetate (brown) (ex ship)	per ton	5	17	6
" (grey) (ex ship)		8	0	0
Magnesium (ribbon and wire)	per oz.	0	2	3
" Chloride (ex ship)	per ton	2	10	0
" Carbonate	per cwt.	1	17	6
" Calcined Magnesia	per ton	8	0	0
" Sulphate (Epsom Salts)	per ton	2	15	0
Manganese, Sulphate		16	0	0
" Borate	per cwt.	2	10	0
" Ore, 70 %	per ton	3	10	0
Methylated Spirit, 61° O.P.	per gallon	0	1	8
Naphtha (Wood), Solvent		0	2	9
" Miscible, 60° O.P.		0	3	7

Oils:—

Cotton-seed	per ton	15	5	0
Linseed		16	0	0
Stearine	per ton	22	0	0
Phosphorus (yellow)	per lb.	0	2	0
" (red)		0	2	9
Potassium (metal)	per oz.	0	3	7
" Bichromate	nett per lb.	0	0	4½
" Carbonate, 90% (ex ship)	per ton	16	10	0
" Chlorate	per lb.	0	0	3½
" Cyanide, 98%		0	1	1
" Hydrate (Caustic Potash) 90 %	per ton	23	10	0
" (Caustic Potash) 75/80 %		19	15	0
" Potash Hydrate Liquid 50 %		11	5	0
" Nitrate (renned)	per cwt.	1	1	6
" Permanganate	per cwt.	3	15	0
" Prussiate Yellow	per lb.	0	0	6½
" Sulphate, 90 % (ex ship)	per ton	9	15	0
" Muriate, 80 % (do.)		8	10	0

Silver (metal) per oz. 0 2 2½

Sodium (metal) per lb. 0 2 9

" Carb. (refined Soda-ash) 48 %	nett per ton	4	15	0
" (Caustic Soda-ash) 48 %		4	5	0
" (Carb. Soda-ash) 48 %		4	0	0
" (Alkali) 58 %	f.o.b. w'ts.	3	17	0
" (Soda Crystals)		2	5	0
" Acetate (ex-ship)		11	0	0
" Arseniate, 45 %		14	7	6
" Chlorate	per lb.	0	0	4½
" Borate (Borax)	nett, per ton	13	5	0
" Bichromate	per lb.	0	0	3½
" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. tons		8	10	0
" (74 % Caustic Soda)		8	2	6
" (70 % Caustic Soda)		7	5	0
" (60 % Caustic Soda)		6	5	0
" (pure liquor 90° Tw.)		3	12	6
" 77/78 % powdered (99 % hydrate)		12	10	0
" Bicarbonate		6	10	0
" Hyposulphite		5	5	0
" Manganate, 25%		15	0	0
" Nitrate (95 %) ex-ship Liverpool	per cwt.	0	7	7½
" Nitrite, 98 %	per ton	26	10	0
" Phosphate		9	10	0
" Silicate (glass)	per ton	4	10	0
" (liquid, 100° Tw.)		3	7	6
" Stannate, 40 %	per cwt.	3	2	9
" Sulphate (Salt-cake)	per ton	0	19	0
" (Glauber's Salts)		1	7	6
" Sulphide		6	15	0
" Sulphite		5	0	0
Strontium Hydrate, 100%		10	15	0
Sulphocyanide Ammonium, 95 %	per lb.	0	0	5½
" Barium, 95 %		0	0	4
" Potassium		0	0	6½
Sulphur (Flowers)	per ton	7	10	0
" (Roll Brimstone)		6	8	0
" Brimstone: Best Quality		4	10	0
Superphosphate of Lime (26%)		2	5	0
Tallow (Beef)		18	10	0
Tin Crystals	per lb.	0	0	4¾
" English Ingots	per ton	65	0	0
Zinc (Spelter)		18	2	6
" Chloride (solution, 100° Tw.)		5	15	0
" Sulphate, Crystal		5	15	0

OIL, PAINT and COLOUR REVIEW.

SATURDAY, DEC. 25 1897.

Contents.

PAGE	PAGE
dine..... 401	Trade Notes..... 405
arts for November..... 401	Tar and Ammonia Products..... 405
..... 402	Miscellaneous Chemical Market..... 406
Complete Spec..... 402	Report on Manure Material..... 406
..... 402	The Metal Markets..... 406
oil Industry..... 403	Liverpool Oil and Colour Market..... 406
nies..... 403	Hull Paint, Oil, and Colour Report..... 406
bars..... 404	West of Scotland Chemicals..... 406
..... 404	Tyne Chemical Report..... 407
..... 404	New Companies..... 407
New Zealand..... 405	Imports..... 407
..... 405	Exports..... 410
idence..... 405	Prices Current..... 411

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ts, and correspondence on all matters of interest to allied industries, home and foreign, are solicited.

should condense their matter as much as possible, only of the paper, and in all cases give their names.

ot necessarily for publication. Sketches should be sheets.

EVER since the pooling of the iodine interests, the movements of this article have been more or less shrouded in mystery. Rumours have been plentiful, and inquiries as to their accuracy even more abundant.

The chief anxiety seems to have been about the future prospects as to price, there being a feeling in some quarters that there might be a decline. On the other hand, a good many who made inquiries seemed satisfied that, if anything, an advance was more likely.

In summarising the position, it must be noted in the first place that the French amalgamation does not seem to have benefited much by its control of the stocks. Again, quite recently the English section of the Convention caused some consternation by adopting what seemed a strange policy, in denying as determinedly as possible the statement that their stocks of crude were low.

At first flush it would seem contrary to the customs of all combinations to suggest to buyers that the plethora of stocks was such as to make an advance almost impossible.

There is another way of looking at it, however, and that is, the necessity of frightening any probable competitors out of the field by alarming reports as to the excessive stocks still on hand, in spite of reduced prices.

This aspect gains colour by the knowledge that Scandinavian enterprise has been turning its attention to the production of iodine from the seaweed that abounds on the coast, near Jæderen.

Whatever the value of the various rumours in this connection may be, one thing is certain—namely, that now the official figures of the production of iodine in Chili have appeared, it is hardly necessary for the Combine to persist further in denying the reported scarcity.

These figures show that out of about 80 nitrate oficinas in Chili, only 32 made iodine last year; and their production amounted to 1,792 kilogrammes, the output being rigorously restricted to the limitations of the "convenio."

The quantity exported was 220,278 kilos. (220½ tons), being an increase of 68,877 kilos. on the total for 1895. Stocks on December 31st, 1896, were 20,774 quintals (of 100 lbs. each), or 2,199 quintals less than at the corresponding period of 1895. The consumption reached 6,427 quintals, compared with 5,002 in the preceding year.

The stocks on hand are therefore equal to several years' requirements, in spite of the artificial restriction of the output. This fact, coupled with the knowledge that, despite the reduction to 7½d., the consumption has not increased to any very appreciable extent, practically disposes of the prospect of an advance in price.

As regards a further reduction, although the present congestion of stocks is not likely to effect such a change by itself, it would be rash to ignore the possibility of such a

movement, while the rumours of outside competition being augmented are so persistent.

As rumours go, there is an element of substantiability about these surmises that is not usually found in connection with similar matters of hearsay.

For the nonce we are disposed to think that things will remain pretty much as they are. The prospective increase in the production of nitrate may necessitate the production of more iodine, and it may not; and unless outside producers can produce it at a figure well below present cost price, it is doubtful whether it would be worth their while to seek to undersell.

In any case, it will be as well to view all suggestions as to future prices through the facts recorded above.

IMPORTS AND EXPORTS FOR NOVEMBER.

THE returns for the past month are more encouraging. In the imports, lead, pyrites, and quicksilver are higher in value and quantity. In the exports, alkali and bleach, also chemical manures, show an increase. The U.S.A. took more bleach.

IMPORTS OF FOREIGN AND COLONIAL PRODUCE.

ARTICLES.	Quantities.	
	1896.	1897.
Margarine	Cwt. 76,896	79,674
Copper Ore and Regulus	Tons. 12,467	12,482
Pyrites	" 42,493	51,453
Tin	Cwt. 72,356	41,339
Alkali	" 14,652	16,401
Brimstone	" 56,180	25,426
Dyes, Coal Tar	L. 65,109	75,508
Saltpetre	Cwt. 18,780	10,537
Petroleum	Gall. 18,914,067	16,680,094
Turpentine	Cwt. 41,823	56,816
Guano	Tons. 687	2,468
Nitrate of Soda	" 8,106	4,460
Paraffin	" 77,104	83,340
Rosin	Cwt. 150,605	69,632
Tallow and Stearine	" 147,976	153,330
Oil Seed Cake	Tons. 35,195	28,865
Wood Pulp	" 25,851	39,403

EXPORTS OF BRITISH AND IRISH MANUFACTURES.

ARTICLES.	Quantities.	
	1896.	1897.
Alkali	Cwt. 414,780	472,170
Cement	Tons. 24,965	26,325
Coal and Coke	" 2,715,375	3,192,581
Copper, all kinds	Cwt. 68,619	90,901
Iron and Steel	Tons. 298,972	313,365
Chemical Manures	" 17,837	25,306
Oils, seed	" 5,424	4,866
Salt	" 54,605	47,556

WHAT OUR SWEETS ARE MADE OF.—Last week, a visit was made to the East End of London where the working classes and the poor live, who are the chief consumers of sweets. At one of the retail shops of a large manufacturer, one pound of mixed sweets was bought, which were being retailed in large quantities at four ounces for a penny, or £37. 6s. 8d. per ton. The sample was submitted to Mr. Halse, a chemist, and here is his analysis:—Crystallizable sugar, 73.00; uncrystallizable sugar (glucose), 10.00; water, 8.00; mineral matter, 0.23; other organic matter (gum, gelatine), 8.77—100.00

THE ROCHEDALE POLLUTION CASE.—Judgment was given on Monday, in the Court of Appeal, composed of the Master of the Rolls and Lords, Justices Chitty and Vaughan Williams, in the case of Black Pitts Bottom Spinning and Manufacturing Company, Limited, v. Kelsall and Kemp, Limited, on the defendants in the action from an order of the vice-chairman of the County Palatine of Lancaster restraining them from abstracting or polluting the water of the Naden Brook, near Rochdale. The Master of the Rolls and Lord Justice Chitty affirmed the decision of the vice-chairman on all points, but Lord Justice Vaughan Williams dissented. The appeal was accordingly dismissed with costs.

The Patent List.

This list is compiled from Official sources in the Manchester Technica Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

- Concentrating Apparatus. J. McNeil and J. Lewkowitsch. 28,747. Dec. 6.
 Insulating Compound. H. J. Brown, O. R. H. Schmidt, and A. Mackenzie. 28,795. Dec. 6.
 Artificial Stone. H. W. Gruner. 28,842. Dec. 7.
 Humidifying Air. J. J. Mann. 28,862. Dec. 7.
 Explosives. L. Davies. 29,005. Dec. 8.
 Manufacture of Calcium Carbide. J. Baslick and W. A. Thornton. 29,008. Dec. 8.
 Electric Carbide Furnaces. J. Baslick and W. A. Thornton. 29,009. Dec. 8.
 Electric Carbide Furnaces. J. Baslick and W. A. Thornton. 29,011. Dec. 8.
 Electro-Deposition of Iron. F. E. Elmore and A. S. Elmore. 29,048. Dec. 8.
 Rendering Materials Uninflammable. A. J. de Hailes. 29,059. Dec. 8.
 Treating Effluents, etc. W. and W. E. Greig. 29,070. Dec. 8.
 Electrical Treatment of Sewage. A. B. Ogden. 29,092. Dec. 9.
 Treating Decayed Rubber. M. Ziegler. 29,093. Dec. 9.
 Smokeless Furnace (with down draught). D. L. Bleyer. 29,143. Dec. 9.
 Treating Sewage. J. Hardwick. 29,160. Dec. 9.
 Manufacture of Gas. W. H. and G. E. Russell. 29,234. Dec. 10.
 Using Slate Refuse. British Marble and Slate Syndicate, Ltd., and W. F. Baker. 29,249. Dec. 10.
 Opaque Pigment. J. Kerner. 29,291. Dec. 10.
 Improvements in Dyeing. H. Laag and M. Rütter. 29,317. Dec. 11.
 Mechanical Calcining Furnaces. J. Godfrey and H. J. Hayes. 29,326. Dec. 11.
 White Lead Packer. R. A. Young. 29,318. Dec. 11.
 Producing Calcium Carbide in Blast Furnaces. F. J. Bergmann. 29,364. Dec. 11.
 Explosives. Siemens Bros. and Co., Ltd. and C. Holden. 29,390. Dec. 11.

ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

These abstracts are specially prepared for the Chemical Trade Journal, and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.

Improvements in the Manufacture of Caustic Soda, or Caustic Potash, from Carbonate of Soda, or Carbonate of Potash. T. Ryan, junr; A. Dyson; and the United Alkali Co., Ltd., all of 611, Exchange Buildings, Liverpool. Eng. Pat. 4,227. Feb. 16, 1897.

In the Loewig process the alkali mixed with the iron oxide must be finely divided, so that some forms of low grade Leblanc ash cannot be used. The inventors substitute solutions of the alkaline carbonates, using even "black salts" or "vat liquor," which is run into a Mactear furnace containing the oxide of iron. For the latter, preference is given to "purple ore." When vat liquor is used the sulphides are driven off during the roasting process necessary to form the alkaline "ferrite" as it is called, so that no special treatment is necessary for their removal, as is usually the case.

A New or Improved Process for the Decolorisation of Palm Oil. J. L. Garle and C. C. Frye, of 136, Holland-road, Kensington, and 24, Woodville-road, Ealing, respectively. Eng. Pat. 28,682. Dec. 15, 1896.

The palm butter is melted, taking care to keep the temperature below 100°C. The fluid oil is then settled and run off into a closed blowing vessel, into the bottom of which ozone, ozonised air, or ozonised oxygen is injected through a perforated coil. The blowing vessel is steam jacketed to keep the butter fluid. The presence of small amounts of nitric oxide or peroxide in the ozone is not a disadvantage. The most desirable temperature for conducting the process is that which will just keep the butter perfectly fluid.

An Improved System of Manufacturing Soaps by the Direct Employment of Oleaginous Seeds. J. Monterrubio. 1173, Calle de Salta, Buenos Ayres. Eng. Pat. 23,197. Oct. 9, 1897.

The object is to avoid the cost of expressing the oils and to utilize the seeds, which are otherwise largely wasted. The procedure is as follows:—First, the seeds (pea nuts by preference) are cleaned, then crushed to a fine paste, and the paste saponified with caustic alkali, either hot or cold. The saponified mass is lastly well beaten and thoroughly mixed, forming, it is claimed, an "economical, hygienic, and pleasant" soap.

Improved Compound for Use in Extinguishing Fires. A. J. Rank, 111, Hatton Garden, London, E.C. (Communicated by A. O. Richter, 1, Sachsenplatz, 3, Dresden). Eng. Pat. 23,126. Oct. 8, 1897.

The mixture is composed of 5 parts by weight of alum and 1 part

of "natron" (presumably soda ash). This can be kept in the solid form in packets, and is added to the water to be used for extinguishing the fire. The materials are kept in separate boxes of a joint capacity of one litre, this amount being sufficient for one hecto-litre of water. A thoroughly ignited mass of hay, straw, and wood-work can be extinguished in a few minutes.

Improvements in Compositions or Paints for Preserving Structures.
W. & S. J. Blake, 115, High-street, Gosport, Southampton. Eng. Pat. 9-447.
April 13th, 1897.

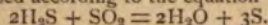
A composition of the consistency of paste, to be applied in the ordinary "tine" and gold size, is described. Two mixtures are specified, one of which contains no zinc oxide, and is composed of 37 parts aluminium powder, 11 of turpentine, and 52 of gold size. When zinc oxide is used the amount of aluminium powder is reduced to 26 parts, and made up to the original amount with 11 parts of zinc oxide.

SOCIETY OF CHEMICAL INDUSTRY.

NOTTINGHAM SECTION.

THE third meeting of the session was held at the Midland Hotel, Derby, on Wednesday, December 15th, Mr. G. J. Ward being in the chair.

Mr. F. J. R. Carulla read a paper on "The Recovery of Sulphur from Sulphuretted Hydrogen," in which he described certain circumstances when he had found that sulphur in the free state could be obtained in large quantities by bringing H_2S into contact with heated SO_2 , such as is produced in a pyrites kiln, whereby the sulphur from this gas is also released according to the equation



The sulphur, which sublimes in the process, can be collected in suitable chambers, as in the well-known method of Claus. By using the same amount of H_2S , the author obtains 50 per cent. more sulphur than is possible by the Claus process, the extra yield being derived from the SO_2 . Specimens obtained in 1893 of the new sulphur produced were exhibited, which to the eye looked fairly pure. Mr. Carulla said he had been induced to bring the subject before them, as Messrs. Brock and Hurter had recently taken out a patent for a similar process, an abstract of which had appeared in the Journal of the Society (Vol. XVI., p. 536); and continued:—"The object of this paper is in no way to institute any prior claim, but to show the great value that may attach to the invention, and to bear witness to the excellence of the product and likely efficiency of the process."

In opening the discussion, Mr. R. M. Caven said that the reaction between H_2S and SO_2 was well known as a lecture experiment.

Mr. L. Archbutt asked whether the use of the Claus kiln was an essential of the process? It seemed to be so in Brock and Hurter's patent.

Mr. Adams said the requisite SO_2 might be obtained by first burning a portion of the H_2S in air.

After a few remarks from the Chairman, Mr. Carulla replied, saying that there was some difficulty in carrying on experiments with these gases on the large scale owing to the stringency of the Alkali Acts. A process might be commercially successful, and yet, owing to the necessity of complying with the Acts, the further expense might make it a losing one. He was not aware that the oxide of iron took any part in the reaction he had described, although certainly Brock and Hurter made use of the Claus kiln, in which case the oxide possibly does assist in the process. The suggestion of Mr. Adams, though ingenious, sacrificed the advantage of obtaining the extra yield of sulphur from an otherwise worthless pyrites.

Mr. R. M. Caven then read a paper, by himself and Mr. Alfred Hill, on "The Estimation of Cuprous Oxide by means of Standard Potassium Permanganate Solution," by which the analysis of sugars may be considerably shortened. The process is based on the circumstance that a mixture of sulohuric acid and potassium permanganate will dissolve cuprous oxide without the separation of metallic copper, a possibility first suggested by Dr. Clowes. After solution of the cuprous oxide and its conversion into cupric sulphate, the excess of permanganate used is titrated by means of oxalic acid at a temperature of 45° to 60° C. Comparative analysis of samples of sugar, carried out by the usual gravimetric process, and also by the authors' new volumetric process, were submitted, and at the conclusion of the paper a discussion took place.

Mr. Archbutt remarked that hydrogen peroxide—now so readily obtainable from sodium peroxide—might be used for the titration instead of oxalic acid. There was at least the advantage that it could be done at the ordinary temperature.

Mr. Adams described a method of preparing asbestos filters which might advantageously replace the paper filters employed by Mr. Caven in one part of his process. Long fibre asbestos was taken and cut up, by means of a pair of scissors, into bits about one-eighth of an inch

long. These were then put into the usual crucible which was attached to the funnel by a piece of india-rubber tube, so as to make the joint air-tight, and it made an excellent filter.

Mr. Caven thanked Mr. Archbutt for his suggestion, which he would try, and bring the subject again before the Society at the February meeting (which will be held in Nottingham), when he hoped to give some further details of the working of the process.

Reports of Companies.

LAGUNAS SYNDICATE LTD.

THE second ordinary general meeting of the shareholders in the Lagunas Syndicate, Limited, was held recently, at Winchester House, Old Broad-street, E.C., Mr. Robert Harvey (the chairman of the company) presiding. He said:

THE OUTLOOK

for nitrate is at present rather depressing, but still I hope that the immediate future will bring us better results. A moment's reflection on the position of nitrate will convince most thinking people that an improvement cannot be far off. At the present time there are not more than half a dozen large oficinas which can place nitrate free on board at 4s. 9d. without an actual cash loss, and even those oficinas which show a small margin of profit are working on their capital by using up their caliche without an adequate return. Those companies which have a debenture service to meet must work as long as they can do so without actual cash loss, and those of the others which can exist under present circumstances, cannot, in my opinion, supply more than two-thirds of the 22,000,000 quintals the market requires. And as so many nitrate works have already closed down, and as consumption has in no way decreased, the improvement in prices must inevitably come as soon as the present heavy stocks are worked off. The litigation with the Lagunas Company has advanced very little since this time last year, but it is very probable that the case will be again in the courts early in January, as the Commission sent to Chili, by the plaintiffs to gather evidence, has returned, and doubtless they will soon be ready to have the case finally terminated in the law courts. Our works are in a highly efficient condition, and our staff both here and abroad are excellent in every sense of the word, and are using every effort to economise so as to meet the exigencies of the present bad times. Their efforts so far have resulted in their succeeding in making our production at such a low price per quintal as to exceed in cheapness the output of most of the other works with which I am associated, and even at the present low prices we are making a very respectable profit.

NEW TAMARUGAL NITRATE COMPANY (LIMITED).

On Monday, Sir Francis Evans, M.P., presided at Winchester-house over the seventh annual general meeting; and in moving the adoption of the report, he remarked that the accounts were the worst which they had ever had to present to the shareholders. Nevertheless, the position of the company was not by any means so bad as some of the shareholders seemed to think. The falling off in the profit was mainly attributable to the small quota allotted to their company under the nitrate combination. Only 173,000 quintals were sold during the year. A large stock of nitrate—over 200,000 quintals was carried forward. If they sold this stock of 200,000 quintals the profit upon it would have gone to the year's accounts now before them, but, following the precedent of all their former accounts, as the nitrate was not sold, they were obliged to carry it into the accounts of the current year, where it would be shown with any profit that there might be on it. The reason they made so little nitrate was that they overlapped the time of the combination, and the consequence was they had been unable to work at more than one-fourth of their strength, in order to fulfil the conditions of the combination. They could easily make a 1,000,000 quintals a year or more if necessary, but they had to act on the arrangement come to.

PRODUCTION INCREASING.

The combination was now broken, and they were making a fair quantity of nitrate, not as much as they could make, but at any rate enough to enable them to give a good account of themselves at the end of the current year. If the nitrate companies would only come to some sensible arrangement among themselves, he knew no reason why a single company should not make a very fair profit for its shareholders. He did not know how much the pressure of bad times might influence them, but if it influenced them to come together and concentrate their business, he hardly knew a single nitrate share which would not be a valuable property. Passing to the balance-sheet, he stated that the debentures now stood at £182,750., which would be reduced in a few days to under £180,000., showing that over £80,000. of bonds had been paid off and cancelled. On the other side of the balance-sheet the oficinas, with nitrate grounds, &c., stood

at £508,000, having been largely reduced by the redemption of debentures. The nitrate grounds purchased from the Chilean Government in 1894 had been written down to £29,400, so that their property under this heading now stood at £538,026. Their stocks of nitrate and iodine and the stores and pulperia stood together at £51,000, and this was their trouble. The nitrate and iodine were taken at cost, and they therefore only stood at £38,384, whereas had they been sold they would have been brought into the accounts at their selling price. Having referred to other items in the balance-sheet, he stated that the net profit was £6,191. The gross profits on the trading for the past year had been £10,291, as compared with £29,359. As he had said, it was a very unsatisfactory account, but there was no reason why they should lose faith in the future of the company. They must go on redeeming their debenture debt, using as little of their nitrate grounds as they could to do it, and when the debt was paid off the profits of the concern would go to the shareholders. Mr. George Bush seconded the motion. A discussion followed, chiefly in regard to the expenses and the directors' fees which it was thought should be reduced considering the bad times. The chairman in reply stated that he altogether dissented from the view that the directors' fees should be reduced in bad times, when their anxieties were much greater than they were in good times. He had very rarely known shareholders to propose that directors' fees should be increased in good times. If they were paid by results the case would be different. The report was adopted with four dissentients.

HINTS ON COPPER SHARES.

SPEAKING of the dividend of the Cape Copper Company, which appears elsewhere in this issue, the *Financial News* says:—Until the publication of the report we shall not know precisely to what is due the remarkable bound in the fortunes of the Cape Copper Company. The increased profits of 1895-96 were attributed by the directors as much to lessened cost and better work as to improvement in the mines themselves, though that contributed not a little. It is believed that this year the directors will show that portions of the property which had not previously displayed particularly good results have proved themselves of greater value. Something must have been gained from the higher price of copper; for the average price of G.M.B.'s in the twelve months ended August 31st this year was over £49, comparing with £45. 14s. for the corresponding period, a increase of $7\frac{1}{2}$ per cent. From what particular sources the larger profits were derived matters little—the point is that the shareholders receive 22½ per cent. A week or two ago, the shares could have been bought for 2½, and the lucky purchasers find themselves in possession of a security yielding close on 16½ per cent. Even at 3½ the yield is £12. 17s. per cent, which makes Cape Coppers attractive, even after the considerable advance. All the leading copper shares have risen sympathetically and the capital exhibit of the Cape Company affords reason for a general movement in this department. The Namaqua Company naturally enforced its claims to the attention of those who had done well in Capes, and as the interim dividend announcement fails to be made shortly, the circumstances of the Namaqua are worth looking into. For several years prior to 1895 no dividend was paid; but for that year $7\frac{1}{2}$ per cent. was distributed, this being followed by the payment of 11¼ per cent. for 1896. On the basis of this dividend Namaquas at 2½ yield exactly 10 per cent.; so that the prospects of a higher distribution have not been in any way discounted. If the production this year has been no greater than that of 1896 the rise in the price of copper would suffice to notably augment the dividend. An improvement of £3. a ton would mean nearly £22,000. on an output of 7,325 tons, and such an increase in the return would enable the dividend to be raised from 4s. 6d. per share (11¼ per cent.) to 8s. 6d. (21½ per cent.). If the improvement in price work out at only £2. a ton, the dividend could be raised to 7s. 6d. (18¼ per cent.), making the yield at present prices over 16½ per cent. Namaqua shares seem to stand just where Capes did a week or two ago, before the sharp advance began; and it would cause no surprise were the cheaper shares to follow the course of Capes, and the Namaqua Company to imitate its near neighbour by announcing a handsome distribution. The prospects of the copper market itself are fair.

THE MEDICAL USE OF OXYGEN.—On Tuesday, Mr. George Stoker (of the Oxygen Home, 2, Fitzroy Square, London) gave a lecture on the oxygen treatment of wounds, ulcers, and such like. The lecture was delivered at the rooms of the Chemical Club, Manchester, under the presidency of Dr. Le Page, in the company of about 80 medical gentlemen. The methods of treatment and its successes were shown by a number of interesting slides, interspersed with explanatory remarks by the lecturer. We shall take the opportunity of referring more fully to this matter in an early issue.

Legal Intelligence.

HIGH COURT OF JUSTICE.

(Before Mr. Justice Stirling.)

THE ALUMINUM COMPANY, LIMITED v. DOMEIER AND CO.
AND THE ELECTROCHEMISCHE WERKE.

THIS was an action brought by the plaintiffs to restrain an alleged infringement of Letters Patent granted to H. J. Castner, dated 25th August, 1890, No. 13,356. On Thursday last Mr. Justice Stirling had before him a motion that the defendants might be restrained by injunction until further order from importing into the United Kingdom and from selling any sodium alleged to be made according to such Patent. Mr. J. Fletcher Moulton, Q.C., Mr. Bousfield, Q.C., and Lord Robert Cecil appeared for the plaintiffs. Mr. Thomas Terrell, Q.C., Mr. Jenkins, Q.C., and Mr. A. J. Walter appeared for the defendants.

Mr. Justice Stirling in giving judgment said: I think that the delay of which the plaintiffs have been guilty in applying to the Court bars their right to an interlocutory injunction, but of course may not bar their right to an injunction at the trial. The evidence shows that the plaintiffs knew the defendants were selling this as far back as the 13th October, 1896. No doubt they wrote and told them they would probably have to make the defendants parties to an action in respect of the sales. The plaintiffs were told at the same time by the defendants in this country that they were selling some of the sodium of the co-defendants. It appears that it has been openly advertised twice a month in the *Chemical Trade Journal* ever since. It seems to me that it is too late for them to move for an injunction, a year after they knew this was going on; therefore I dismiss the motion.

Mr. Terrell: I ask for costs in any event. Mr. Moulton: My Lord, it would be costs in the cause. Mr. Justice Stirling: Costs in the action. Mr. Moulton: The defendant will keep an account. Mr. Terrell: Certainly, I think my learned friends clients ought to be put to some punishment for having insisted in going on with this.

HINTS ON STRIKES.

WHY THEY LIKE IT.

CONSIDERABLE elation is expressed by several leading newspapers and trade journals over the continuance and threatened spread of the British labour strike. Reports from all quarters show that large orders for various manufactured goods and machinery formerly given to English houses are being placed in this country. The Australian Railway Company, which has hitherto dealt exclusively with English manufacturers, has just given an American firm an order for 100 locomotives. Other similar cases are mentioned. The *World*, commenting on the matter, says: "Conservatism in labour matters is giving British commercial prestige a decided set-back. Trade is rapidly leaving England, and when trade once leaves a country it seldom returns. The present situation is therefore inconceivably alarming to British prosperity."

A WARNING.

"In a newspaper controversy about the rights and wrongs of the engineering strike going on in Great Britain," says Mr. Angus Sinclair, "I have repeatedly seen the statement made by workmen that if their trade is driven away from the British Isles they will follow it. Should they follow it to America, they will have to greatly change their ways to secure steady employment. Instead of an eight-hour day they will be glad to remain in the shop 56 or 60 hours a week. If they object to attending to as many machine-tools as other mechanics operate, they will be sent to the office for their time-check. If they happen to be employed on day-work, which is necessary in a few departments, they will find that they cannot push a file or wield a scraper with deliberate leisure. They will find a foreman in evidence, who has a habit of saying: 'Do you intend working all the week on that two hours' job?' When he gets thoroughly drilled into the habit of the ordinary American machine shop, he will observe why the keenest observers say that, while paid the highest wages in the world, the labour of the American mechanic is cheaper than that of any other workman."

CHANGE OF FIRM.—We learn that the partnership heretofore existing between Mr. Ferdinand Schoelles and Mr. John Brown under the style of Schoelles and Brown (agents for Leopold Cassella & Co.), has been dissolved by mutual consent. The business will in future be carried on by Mr. Brown at 32, Queen-street, Albert-square, Manchester, in conjunction with Mr. Henry Forth, of the firm of Charles Forth & Son, New Basford, Nottingham, under the style of Brown and Forth.

CYANIDE PROCESS IN NEW ZEALAND.

WITH reference to the New Zealand gold-mining industry, the *New Zealand Herald* reports that the provisions of the Cyanide Bill, introduced for the purpose of effecting the purchase by the New Zealand Government of the cyanide patent rights, had not given unalloyed satisfaction to those interested in the mining industry. The Auckland Chamber of Mines approved of the measure generally, but questioned the wisdom of retaining two clauses in the Bill—that which gave the Cassel Company power to recover royalty upon bullion recovered by the cyanide process up to the date of the purchase of their rights by the Government, and that prohibiting the use of any compounds of cyanide without the obtaining of a Government licence. It was being contended that the first provision gave the Cassel Company power to charge any royalty it might think fit, and that the purchase money paid (£15,000.) should cover all arrears. Regarding the second clause, the opinion was that it virtually revoked all existing cyanide patents, and would prevent improvements being effected in the process. The Chamber had addressed the Government on the subject. With reference to the complaint made by colonial shareholders of companies whose headquarters are in England regarding the withholding of information respecting crushing returns, development work, and the general prospects of properties, the same Auckland paper says:—"The majority of the colonial representatives of English companies have intimated their willingness to afford shareholders the desired information. In doing so several have expressed the opinion that what they wish to avoid is further legislation, which, one representative of a leading English syndicate said, 'had done enough harm as it was.' The few exceptions—those who (probably in accordance with instructions received from the home boards of directors) have declined to afford the desired information to local shareholders—should therefore recognise that the policy adopted is a foolish one, and that their obstinacy may cause the interests of others to be injuriously affected. Conciliation, not antagonism, is advocated, and, in the interests of such an important industry as mining, it is hoped that there will be no exceptions to the adoption of the former policy."

THE SUGAR BOUNTIES. GERMAN AND FRENCH NEGOTIATIONS

THE *St. James's Gazette* says:—An interesting statement was made recently by the Secretary of the Treasury in Germany concerning the sugar bounties. Germany, he said, has entered into negotiations with the interested Powers for the abolition of the bounties, and in his own words, "the Government hopes to be in a position to submit a Bill on the subject in the second half of the present session." This will be encouraging news to our West Indian colonies. And we are able to supplement this information from Berlin with further intelligence, formally perhaps unfavourable, but really favourable to the success of these international negotiations. The real stumbling-block in the way of the abolition of the bounties is France. It was by France that the last Sugar Bounty Conference was wrecked. And the French Premier now in office, M. Méline, is the strongest Protectionist in France. We are in a position to state, however, that important negotiations have been proceeding with the French Ministry on the part of leading French business houses which have strongly impressed even M. Méline with the danger of maintaining the present policy of increased export bounties on sugar. The result of these negotiations is that there is now every prospect that something will be done. The main question, however, is how the interested Powers are to be brought round to a change of policy which primarily is to be beneficial to the British Empire, and only secondarily to their own taxpayers and consumers, who have now to pay so highly in order to raise the money for the bounties. If our information is correct (and we have every reason to believe that it is), it will be very difficult for M. Méline to agree to a withdrawal of the bounties simply on the invitation of Germany or any other Power. The force of party feeling might be too strong for any French Ministry to run the risk of defeat in the Chamber by taking anything like the initiative in such a matter. But the situation would be altogether altered if a push were given by a firm intimation from Great Britain that unless the bounties were withdrawn the British Government would have recourse to countervailing duties. All that is wanted in Paris is definite pressure of this sort, and something like a hint has already been given to the Foreign Office that this is the case, and has, to our knowledge, been very recently under the consideration of the Cabinet. So far as we have been able to gather, the position of the British Cabinet is at present this:—Mr. Chamberlain has secured the consent of his colleagues to the summoning of an international conference. But until very recently there was a decided opposition in certain quarters to committing the Government to even a threat of countervailing duties. This reluctance has, however, been considerably modified by the later information received from Paris. The Conference, when summoned, will in all probability meet in Paris, and not in London.

Selected Correspondence.

THE CHEMICAL TRADE.

To the Editor of the *Manchester Guardian*.

SIR,—We observe from your issue of 21st inst., under the heading of "Gloomy Prospects in the Chemical Trade," that the "salt cake makers, bleachworkers, and other employes at the chemical works of Bowman, Thompson, and Co., Lostock, near Northwich, have received notice that after the 1st January, a reduction of 10 per cent. will be made in wages. Several branches have refused to accept the reduction, and claim that they are now receiving less than the employes at Widnes and Runcorn." We unfortunately cannot take exception to the fact that chemical trade prospects are gloomy, but that the effect of this is such as your issue indicates we most strongly repudiate. It is not a fact that we have given notice of a reduction of 10 per cent. from the 1st January. No notice whatever has been given. Still less a fact is the statement that several branches have resolved to resist this. Recognising the state of trade and that others had made very considerable reductions (as high as 15 per cent.) in the district, our manager put it to the men that, considering the state of trade, it would be better appreciated if they came forward with a small voluntary offer. The departments held meetings, with the result that almost to a man they came forward with an offer of a reduction of 5 per cent. to take effect on the 1st January. Amongst the men were some sixty unionists, and, be it said to their credit and good sense, they came forward and made the same offer as the rest, and that unanimously.

BOWMAN, THOMPSON & CO., LIMITED.

Northwich, December 21st, 1897.

Trade Notes.

SOCIETY OF CHEMICAL INDUSTRY.—*Manchester Section*.—We have been requested to notify that at the next meeting (Jan. 7th, 1898) Mr. J. Carter Bell, Borough Analyst for Salford and Analyst for the county of Chester, etc., will read a paper on "The Oxygen Test for Sewage and other Effluents as carried out in the Laboratory of the Mersey and Irwell Joint Committee." All chemists interested in the matter, whether members of the Section or not, are invited to attend and take part in the discussion.

ANOTHER PETROLEUM FATALITY.—During some wedding festivities early on Tuesday morning at a house in Great Charlotte-street, Blackfriars-road, London, a petroleum lamp was upset, and the blazing oil spread in all directions. Seven persons who were unable to pass the staircase were rescued amid great excitement by the aid of a fire-escape, but George James Ward (60) was suffocated.

PERSONAL.—Mr. Alfred Mond, second son of Dr. Ludwig Mond, F.R.S., of Brunner, Mond, and Company, Limited, has been adopted officially and definitely as the Liberal candidate for South Salford, and will be brought forward whenever a vacancy occurs. The sitting member is Sir Henry H. Howorth, who has thrice contested the division, and has represented it since 1886.

ARTIFICIAL INDIGO.—Numerous attempts to produce artificial indigo have been made in the course of this century. In 1881 a Munich chemist almost succeeded, but no practical result could be obtained, because of the dearth of the chemical process. It is now currently reported that it has been produced at a commercial price at Ludwigshafen a/Rhine. The newly-invented production is claimed to be very cheap.

Obituary.—Mr. Edward Eaton, J.P., of Macclesfield, died last week in his eighty-fourth year. He was a man of wonderful robustness of constitution, having carried his gun and had been a good shot up to a few years ago. He was in business as a drysalter, and many years ago was engaged in the silk trade. A great musician, he was foud of telling how in his early days he walked to Manchester and back for a music lesson.

AMERICAN CHEMICAL TRADE.—The Calcium Carbide Company has begun operations at Three Rivers, Quebec. It has agreed to spend £400,000. in 18 months in the industrial enterprise or forfeit £10,000., which has been paid over to the Government for the privilege. It is said the Roanoke, Chemical Co., Va., will remove its fertilizer works to Wilmington, N.C. Mr. W. I. Jones, the company's representative, visited Wilmington recently to complete arrangements for the removal. The Tennessee Chemical Company of Nashville, Tenn., which is largely engaged in the manufacture of fertilizers, has completed extensive improvements to its plant, and commenced operations on December 1st. The Strong Chemical Company of Hudson, Columbia County, N.Y., was recently incorporated at Albany, with a capital stock of £1,000. The directors are Lillian F. Strong and Harry P. Strong, of Hudson, N.Y.; Frank Hasbrouck and Braddock E. Strong, of New York City.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols are still low, but there is an improvement in the inquiry; 90's, are quoted 1s. 7d., and 50/90's, 1s. 8½d. There is practically nothing fresh to report concerning carbolic acids and naphthas, prices remaining as last quoted. The chief feature of the market is the improvement in anthracene, which is decidedly firmer, and a rise seems imminent. Pitch has weakened in position somewhat, but without quotable change in price.

Sulphate of ammonia has slackened for the holidays, but the market closes firm as regards prices, and there has been an active spot demand during the week. Current quotations are:—London outside makes, £9.; Liverpool, £9. to £9. 2s. 6d.; Hull £9 to £9. 1s. 3d.; and Leith, £9. to £9. 2s. 6d.; all prompt. For forward, Beckton price is £9. 5s. for Jan.-April delivery.

MISCELLANEOUS CHEMICAL MARKET.

Trade generally during the past week has been of a quiet nature, the approaching holidays, no doubt, being the cause, and there is but little change in prices to report. Bleaching powder somewhat slow of sale, and prices continue in buyers' favour. Caustic soda sells freely, and prices are steady at £7., rails, makers' works, and £7 5s. f.o.b., for 70%. Soda ash of all grades without change. Saltcake in moderate request. Chlorates show no signs of improvement, values for prompt being—potash 3½d. and soda 4¾d. For next year still lower prices are named. Sulphate of copper is a shade weaker, at £16. to £16. 5s. f.o.b. Sulphur continues to sell satisfactorily, and prices are well maintained; rock £4 12s. 6d., roll £6 5s., f.o.r. Acetates continue to improve. Lime (brown) is worth £6., and grey £8. Soda £12. 10s. per ton. Flake licharge weak r., at £15. 15s. to £16. Lead salts without change, and in poor demand. Bichromates still selling at low rates. Prices to-day are: potash 4d. and soda 3¼d per lb. White powdered arsenic is well maintained as regards price, but the demand at present is small; £21. 5s. to £21. 10s. may be taken as to-day's lowest price. Nitrate of soda meets with moderate inquiry at £7. 10s. to £7. 15s. according to quality. Ammonia salts dull, grey muriate £18., white £20. Sal ammoniac 31s. and 33s. Carbolic acids are unchanged—crude (60's) 2s. per gallon; crystals (40's) 7½d. Oxalic acid 3½d. The demand for fine chemicals is more satisfactory.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron firm: Scotch warrants closed at 45s. 5½d.; Middlesbrough, 40s. 3½d. cash; and hematite, 48s. 4½d. Copper quiet: Chili bars, G.O.B.'s and G.M.B.'s, closed at £48. 2s. 6d. to £48. 7s. 6d. cash, and £48. 11s. 3d. to £48. 16s. 3d. three months. Tin steady: Straits closed at £62. 6s. 3d. to £62. 16s. 3d. cash, and £63. to £63. 10s. three months; Australian, £63.; English ingots, £65. 15s. to £66. Lead dull: Spanish, £12. 11s. 3d.; English, £12. 15s.; Silesian spelter, ordinary, £18. 2s. 6d. Nickel, 1s. 2½d. Antimony, £30. 5s. Quicksilver: First hands, £6. 17s. 6d.; second hands, £6. 17s. Copper shares steady: Cape, 3¾ to 4; Copiapo, 1¾ to 2½; Libiola, 2½ to 2¾; Mason and Barry, 2¾ to 3¾; Rio Tinto, 2¾ to 25; Tharsis, 6½ to 6¾.

GLASGOW, WEDNESDAY.—Market firmer, and a small business. Scotch done at 45s. 4d. and 45s. 6d. cash; also at 45s. 8d. and 45s. 8½d. one month; buyers, 45s. 5½d. cash; sellers, ½d. more. Cleveland done at 40s. 4d. cash; buyers, 40s. 3½d. cash; sellers, 1d. more. Cumberland hematite done at 48s. 4d. cash; buyers, 48s. 4½d. cash; sellers ½d. more. Middlesbrough hematite, buyers, 49s. 3d. cash; sellers, 49s. 6d.

REPORT ON MANURE MATERIAL

The market has begun to assume a holiday character, and business during the week has been only on a limited scale.

Quotations for mineral phosphates are firmly maintained, but no important business is reported. Continental and Baltic buyers show most interest in the higher grade rock, but they hesitate to pay full prices asked by sellers.

There is nothing fresh reported in River Plate bones. The higher prices demanded for Bombay bone meal, afloat and for shipment, have not resulted in business, and at the close, £4 5s. per ton, ex quay Liverpool, is full market value.

Nitrate of soda is quiet, but firm at 7s. 6d. per cwt. for good up to 7s. 7½d. for refined.

A parcel of River Plate dried blood, just arrived, has been sold at 7s. 7½d. per unit, ex quay Liverpool.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is steady, and in good demand at fair prices. Olive is steady, but sales are rather restricted owing to scarcity. Linseed firm at 16s. to 16s. 6d. cwt. for Liverpool makes in export casks. Cottonseed quiet, at 14s. 6d. to 15s. 3d. cwt. Castor oil remains quietly steady at 3½d. to 3¾d. per lb. for good seconds Calcutta and first pressure French Tallow firm, and a fair business doing. Resin is moving quietly at 4s. 4½d. for common, 4s. 6d. to 5s. 6d. medium, and 6s. 6d. to 7s. 6d. for fine. Spirits of turpentine steady, but rather slow of sale, at 24s. 3d. to 24s. 6d. on spot. Petroleum steadier, with American offering at 5¼d. to 7d., and Russian refined 4¼d. to 5d. per gallon.

CAKES.—American Western linseed on the spot are rather firmer in tone, and moderate sales have been made at a slight advance on previous prices, viz., £7. to £7. 2s. 6d., and Liverpool makes have again been in very fair request at £8 to £8. 10s. per ton, according to brand. An exceedingly quiet tone continues to prevail in the market for American decorticated cottonseed, but the quotations remain without material alteration at £5. 7s. 6d. to £5. 17s. 6d. for good to choice brands, according to quality, whilst for Liverpool makes a very fair consumptive inquiry has been experienced for both decorticated and undecorticated at £6. 5s. to £6. 15s. for the former, and £4. 1s. 3d. to £4. 10s. per ton for the latter, according to brand. Egyptian have rather a steadier market, and sellers on the spot still ask £4s. 1s. 3d. per ton with a slightly better inquiry experienced.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire—common £10., medium £12., best £15.; Derbyshire—common 40s., medium 50s., best 60s.; Welsh—best 90s., seconds 50s., and common 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead: £16. Red lead unchanged. Venetian red: £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide: £22. 10s. to £25.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—At the present moment a fire is raging on the premises of Messrs. Major, who are tar distillers and chemical manufacturers, of this place—owing to the cracking of a still, it is said. Trade here is excessively dull, and prices naturally are the same, and holds little prospect of any immediate improvement. The imports to date against the same time a year ago, have been:—Linseed, 710,757 qrs., against 960,469 qrs.; rapeseed, 99,322 qrs. against 105,894 qrs.; cottonseed, 196,673 tons against 163,280 tons; oilcake, 11,366 tons against 12,438 tons; olive oil, 4,380 tons against 5,672 tons; tar, 14,957 barrels against 18,168 barrels. Linseed oil is dull, and quoted spot and month, 13s. 9d. per cwt.; forward, first four months, 14s. 3d.; May-Aug. 14s. 6d. per cwt., naked. Boiled and refined, £1. to £1. 10s. per ton extra. Refined cotton oil also dull and quoted spot naked, 12s. 6d. per cwt., sellers; forward Dec.-April, 12s. 7½d., naked; filtered qualities about £1 per ton extra; crude oil is quoted 11s. 6d. per cwt. spot; ordinary casks £1. and barrels £1. 10s. per ton extra. Olive oil is without change, with the usual seasonal rumour of failure of crops; this, however, does not create a demand. Turpentine, 24s. 6d. Cod oils, £15. 10s. to £18. per ton. Castor oil from 3½d. per lb. Oleines from £16. to £18. per ton for brown. Olive oil soap, from £16. per ton. Danish butter 114s. per cwt.; Dutch, 106s.; Australian, 105s. to 110s.; German, 96s. to 105s.

CAKES.—The market for feeding stuffs is not brisk: after the turn of the year some change may be expected. Linseed cakes are quiet, 95% pure, £7. 15s. to £7. 17s. 6d. Oilcakes (linseed), £6. 15s. to £6. 17s. 6d.; Russians, £7. 7s. 6d. to £7. 12s. 6d.; Americans, £7. to £7. 5s. Cotton cakes firm, but orders almost nil; deliveries upon contracts are well maintained; best makes, £4. to £4. 1s. 3d.; seconds, £3. 17s. 6d. to £3. 18s. 9d. Rape cakes, Black Sea, £4 per ton.

PAINTS.—There is no change in the situation; makers continue running short time. The advent of the New Year is much needed, with more settled conditions. Prices unchanged.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Since the despatch of last report, sulphate of ammonia has steadily held to the bettering disposition, and the price now, for prompt f.o.b. Leith, is rather over £9., say between £9 and £9. 2s. 6d. with, however, no forward business moving. In regard to forward dealing, the views of buyers and sellers are at the moment too wide apart; but if the prompt market continues to retain its present soundness, there is no

doubt advance dealing at good prices will in some measure be recorded soon after the holiday stoppage. In mineral oils and paraffins there is no change in prices; but it is significant of the generally oppressed condition of the industry that one of the works, in its annual report this week issued, owns to having dropped over £14,000. on the year's operations. This concern, however, has been exceptionally harassed. In ordinary chemicals, there are no important price changes, but business is quickly ringing down for the annual closing.

Chief prices current are:—Soda crystals, £2. 10s. to £2. 17s. 6d. nett, Tyne, soda ash, 48/62°, £4. 5s. to £4. 15s. nett, Tyne; white alkali, 48/52°, £5. to £5. 10s. nett, Tyne; alum in lump, £4. 17s. 6d. to £5. 7s. 6d. nett, Glasgow; caustic soda, white, 74° £8. 2s. 6d., 70/72° £7. 5s. od., 60/62° £6. 5s. od., cream 60/62° £6. all nett, Liverpool; bleaching powder, 35/37°, £6. 5s. nett, Tyne; saltcake, 19s.; borax, English, refined, £14., and boracic acid, £25. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 7s. 6d., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4d. nett, for Scotch and English deliveries (for export, 3¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3d. nett, f.o.b. Glasgow); chlorate of potash, 3¼d. less 5%, any port; nitrate of soda, 7s. 6d. to 7s. 9d.; sulphate of ammonia, £9. to £9. 2s. 6d., prompt, f.o.b. Leith; sal ammoniac, first and second white, £33. and £31. nett any port; sulphate of copper, £16. to £16. 2s. 6d. less 5% Liverpool; paraffin scale, hard, 1½d. to 1½d. per lb., soft, 1½d. per lb.; paraffin wax, 120° semi-refined, 1½d. to 2d. per lb.; paraffin spirit (naphtha), 64d. to 7d. per gallon; paraffin oil (burning), No. 1, 5¼d., and crystal, 6d., at Glasgow and other big centres, for Scotch buyers (English sales a shade lower); ditto (lubricating) 86½° £4. 10s. to £5. 0s., 88½° £5. 10s. to £6. and 89/89½° £6. 5s. to £6. 15s. Week's imports of sugar at Greenock were 4,500 bags cane unrefined, and 4,534 baskets beet unrefined.

TYNE CHEMICAL REPORT.

TUESDAY

There is no change to report in the chemical market; business for export is very dull, as customary at this period of the year. Soda crystals are in fair demand for home consumption at £2 12s. 6d. per ton, gross weight, locally. Sulphur, £5. per ton. Caustic 76/77%, £8. 15s. to £9. per ton, and 70% £7. 10s. per ton.

Bleaching powder, softs, £6. 5s. per ton, nett; hards, £6. 10s. per ton, nett; caustic soda, 76/77° £9. and 70% £7. 10s. per ton, nett; recovered sulphur, 2 cwt. bags, £5. per ton, nett; soda ash, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. 6d. per ton, nett; do., 52%, £4. 15s. per ton, nett; alkali, 36%, £3. 12s. 6d. per ton, nett; white alkali, 48%, £5. per ton, nett; do., 50%, £5. 5s. per ton, nett; do., 52%, £5. 10s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 12s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 12s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95° crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminates of soda, £30. per ton, nett.

SALT.—South Durham salt is unchanged in price at 9s. to 9s. 6d. per ton, f.o.b. Tees.

COALS.—There has been a very strong demand during the week, and prices have been fully maintained. Best steam and bunker coals have been shipping freely. Coke is steady for home consumption, and better prices are asked for forward delivery. Best Northumbrian steam, 8s. 3d. to 8s. 6d. per ton; second qualities, 7s. 3d. to 7s. 6d. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; gas coals, 8s. 3d. to 8s. 6d. per ton; bunker coals, 7s. 6d. to 7s. 9d. per ton; coke, 17s. 6d. to 20s. per ton.

New Companies.

Baku Oil Co., Ltd.—CAPITAL £30,000, in £1. shares. This company has been formed to adopt an agreement with J. W. Hughes, the London Agency, Limited, and A. G. Parker, and to produce, refine, store, supply, and distribute petroleum and petroleum products. The subscribers to the memorandum of association are:—A. S. Russell, 97, Upper Osbaldeston-road, N., accountant; M. J. Rathgen, 7, Nelson-road, Stroud Green, N., clerk; A. W. Iff, 143, Mortimer-road, Kensal Rise, W., clerk; A. H. Everett, 83, Petheron-road, Highbury New Park, clerk; W. S. Morgan, Tenby House, Castle Hill, Ealing, secretary; G. C. Willis, Prudhoe House, Lower Tottenham, clerk; C. E. Reeve, 15, Collyer-road, Crystal Palace, S.E., clerk.

Welsbach Incandescent Gas Light Co., Ltd.—CAPITAL £3,500,000, in 300,000 preference shares, of £5., 1,350,000 ordinary shares of £1., and 650,000 deferred shares of £1. each. This company has been formed to acquire the business of the Incandescent Gas Light Co., Limited, the Austrian Incandescent Share Co., Limited, the Second Austrian Incandescent Share Co., Limited, and the Irish Incandescent Gas Light Co., Limited, to adopt an agreement with the Reconstruction Guarantee Co., Limited, and to manufacture, sell, and deal in incandescent lights, lamps, mantles, appliances, chemicals, etc. The subscribers to the memorandum of association are:—H. C. Burdett, K.C.B., The Lodge, Porchester Square, W.; F. Williams, jun. Carlton Club, S.W., gentleman; G. Beresford, 17, Albemarle-street, W., major general; L. Fontblanc, 14, Palmer-street, S.W., gentleman; W. Ellis, jun., Army and Navy Club, St. James's-street, colonel; A. C. Bethell, Middlethorpe Lodge, York, gentleman; L. Rogers, 44, Dalberg-road, Brixton, S.W., clerk.

Lansop, Ltd.—CAPITAL £6,000, in £1. shares. This company has been formed to acquire the business of a chemical manufacturer carried on by J. Hopkinson at Marion St., Listerhills, Bradford, to adopt an agreement with J. Hopkinson and T. Cowling, and to carry on the business of chemists, druggists, dyers, oil and colourmen, soap manufacturers, etc. The subscribers to the memorandum of association are:—F. Illingworth, Heather Bank, Heaton, Bradford, wool comber; C. Taylor, 2, Mornington Villas, Manningham, Bradford, wool comber; T. Cowling, 16, Bertram-road, Bradford, grease extractor; G. B. Stephenson, 1, Easby-road, Bradford, oil merchant; G. Spreight, Belmont, Park View-road, Bradford, oil merchant; F. Taylor, Oak Lane, Bradford, solicitor; J. Hopkinson, 50, Beamsley-road, Shipley, chemical manufacturer. Registered office, Marion-street, Listerhills, Bradford.

William Jameson, Ltd.—CAPITAL £20,000, in £1. shares (10,000 7½% preference). This company has been formed to adopt an agreement with F. J. Billingham, and to manufacture, sell, and deal in "Jameson's Arsenical Soap," and every kind of toilet and household requisites and specialities. The subscribers to the memorandum of association are:—W. T. Windsor, 22, Queen Anne's Grove, Bedford Park, W., gentleman; F. J. Billingham, 92, Newtonton Butts, S.E., manufacturer; G. Willis, 99, Longley-road, Tooting, S.W., clerk; W. Simmons, Chancellor-road, W. Dulwich, accountant; C. Taplin, 130, Brixton-road, S.W., gentleman; H. C. Church, 2, Kelmere Grove, E. Dulwich, gentleman; H. Betson, 40, Gerrard-street, N., gentleman.

St. John Sulphite Pulp Co., Ltd.—CAPITAL £60,000, in 1,500 preference, and 4,500 ordinary shares of £10. each. This company has been formed to carry on the business of wood pulp makers, paper makers, and timber merchants. The subscribers to the memorandum of association are:—J. Galloway, Seggie, Guardbridge, Fife, paper manufacturer; H. Haigh, Ramorie, Ladybank, Fife, landed proprietor; J. Anderson, Morton, Leven, engineer; F. Wallace, Royal Bank House, Leven, bank agent; W. Dixon, Howiegate, Markinch, paper maker; P. Grosset, Millfield, Leven, paper maker; W. Shepherd, Royal Bank Buildings, Leven, solicitor. Registered office, Royal Bank Buildings, Leven, Fife.

IMPORTS OF CHEMICAL PRODUCTS

AT
THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending December 11th.

Acetic Acid—

Germany, 52 pks. R. Ulrich
Holland, 200 R. W. Greeff & Co.

Acetone—

Holland, £30 G. Rahn & Co.
France, 13 cks. 13 lbs. R. D. Lyon & Co.

Germany, 23 Matthews & Luff

Alum—

Holland, 440 bgs. Tough & Henderson

Arachide Oil—

Holland, 3 cks. Philipps & Graves

Arsenic—

Portugal, 121 cks. Coverley & Westray

Asbestos—

Canada, £1,000 Deering & Robottom

Germany, 25

Holland, 13

France, 6

Holland, 11

U. States, 103

Germany, 50

Barytes—

Germany, 45 cks. W. Harrison & Co.

Holland, 33 pks. Robertson Selley & Co.

Germany, 51

Belgium, 716 bgs.

Craven & Co.

Philipps & Graves

Mory & Co.

G. Rahn & Co.

L. & I. D. Jt. Co.

T. H. Lee

Holland, 13 cks.

" 48

" 81

" 33

G. Rahn & Co.

O'Hara & Hoar

J. L. Lyon & Co.

W. Balchin, Ltd.

Bleaching Powder—

Holland, 150 cks. J. M. Steel & Co.

Germany, £133 H. Lambert

Bone Meal—

E. Indies, 145 t. Cornwell, Son & Co.

" 250 G. S. N. Co.

Bromine — Germany, 20 cs. A. & M. Zimmermann	Natal , 27 A. & W. Nesbitt	Plumbago — Germany, 15 cks. T. H. Lee	
Calcium Citrate — Italy, 21 cks. B. Jacob & Sons	Turkey , 25 t. Fellows, Morton & Co. 10 Adam Bns.	" 11 C. Tennant, Sons, & Co.	" 22 pks. Steinhoff, Sons, & Co.
Camphor — Germany, 1 cs. T. H. Lee	Farina — Germany, 100 bgs. Hernu, Peron & Co.	" 5 Beck & Pollitzer	U. States, 20 cks. Thames S. T. & L. Co., Ltd.
Caoutchouc — Singapore, 442 c. L. & I. D. Jt. Co.	Holland, 126 J. Barb. & Co.	" 50 W. Bridge & Sons	" 45 pks. G. Rahn & Co.
Belize, 5 A. Everingham & Co.	" 150 H. Lorenz	" 1,127 J. Thredder, Son, & Co.	Varnish — Belgium, 5 pks. Stobbs, Wilson, & Co.
Singapore, 90 " & Co.	" 100 J. Knill & Co.	" 51 R. Waters	Germany, 16 T. H. Lee
" 6 Kaltenbach & Schmitz	Gamboge — Singapore, 11 cs. L. & I. D. Jt. Co.	Potassium bicarbonate — Holland, 9 cks. A. & M. Zimmermann	" 2 L. & I. D. Jt. Co.
Penang, 189 E. Boustead & Co.	" 50 900 c. E. & T. Pink	Potassium Carbonate — Belgium, 80 c. A. J. Luke & Co.	Verdigris — France, 4 cks. B. & F. Wf. Co.
459 E. Boustead & Co.	" 50 275 H. Johnson & Sons	Germany, 70 Petri Bns.	White Lead — Hong Kong, 20 cs. W. M. Smith & Sons
Madagascar, 5 S. Figgis & Co.	" 300 500 Pearce, Pelly & Co.	Canada, 80 Charles & Fox	Germany, 25 cks. W. A. Rose & Co.
France, 27 H. Johnson & Sons	" 2,050 7,100 R. G. Hall & Co.	France, 116 J. A. Reid	Belgium, 46 T. & W. Farmiloe, Ltd.
Zanzibar, 5 L. & I. D. Jt. Co.	France, 700 700 Fellows, Morton, & Co.	Holland, 100 R. W. Greeff & Co.	Germany, 30 Taylor Bns.
Germany, 19 F. Huth & Co.	" 1,000 1,000 G. Clark & Sons	Potassium Chloride — Germany, 445 J. W. Drysdale & Co.	Holland, 71 T. & W. Farmiloe, Ltd.
P. E. Africa, 37 Brookes & Green	" 50 286 J. Keiller & Sons	Potassium Chloride — Holland, 24 dms. H. Johnson & Sons	Germany, 63 Randall Bns.
Carbolic Acid — Germany, 30 cks. J. G. Back	Germany, 30 246 M. D. Co.	Germany, 508 bgs. Anglo-Contl. Guano Works	Belgium, 13 J. L. Lyon & Co.
Castor Oil — France, 33 cks. Kumpff & Eckenstein	U. States, 75 450 Soundy & Sons	" 250 Bessler, Waechter, & Co.	Holland, 20 Blundell, Spence, & Co.
E. Indies, 15 J. Owen	" 50 275 Ohlenschlager Bns.	Potassium Oxymuriate — Sweden, 35 pks. G. Boor & Co.	Germany, 500 pks. Christophersen, Andrews, & Co.
Caustic Potash — France, 20 drs. W. E. Cole	" 100 600 Deering & Robottom	Holland, 30 kgs. L. & I. D. Jt. Co.	Canada, 3,920 W. D. Cork
Germany, 40 J. M. Steel & Co.	" 300 500 Smith & Co.	Pumice Stone — Italy, 5 t. Tyne S. S. Co.	Sweden, 800 London Paper Mill Co.
France, 20 F. W. Berk & Co.	France, 200 200 Trier, Meyer & Co.	" 20 O'Hara & Hoar	Norway, 1,058 W. G. Taylor & Co.
Chemicals (otherwise undescribed)	Glue — Holland, 140 M. H. Voss	" 20 E. Narlian	Holland, 8 H. Lambert
Germany, 4158 Philipps & Graves	Germany, 210 L. & I. D. Jt. Co.	Pyrites — Pomaron, 1,730 t. Mason & Barry, Ltd.	Germany, 510 E. J. & W. Goldsmith
Holland, 10 T. H. Lee	Belgium, 1,550 J. Barber & Co.	Spain, 800 Anderson, Anderson, & Co.	" 278 C. S. Lovell
Germany, 14 Craven & Co.	Holland, 86 Hermann, Keller & Co.	Rosin — Savannah, 5,950 bris. F. & S. Chiesman & Co.	" 555 W. G. Taylor & Co.
U. States, 60 Knight & Morris	Germany, 70 M. D. Co.	Rosin Oil — France, 200 bris. Fleming's Oil & Chemical Co.	Norway, 4,884 London Paper Mill Co.
Germany, 15 A. & M. Zimmermann	France, 16 L. & I. D. Jt. Co.	Saltpetre — Germany, 40 cks. J. Hall & Son	Sweden, 30 W. D. Cork
France, 380 B. & F. Wf. Co.	Holland, 30 G. Rahn & Co.	" 140 P. Hecker & Co.	Norway, 1,600 J. Sharp
" 63 Hernu, Peron & Co.	" 132 W. H. Carey & Sons	" 222 Lucas & Spencer's Wf	Sweden, 102 W. Balchin
Belgium, 160 T. H. Lee	Germany, 102 Harrison & Co.	E. Indies, 345 bgs. Perkins & Homer	Sweden, 60 Christophersen, Andrews & Co.
Germany, 398 " & Co.	France, 208 Burnett Bns. & Co.	" 241 A. B. Curtis & Co.	Holland, 52 C. S. Lovell
" 14 Blondeau & Co.	Germany, 624 T. H. Lee	Soda — Belgium, 2,450 c. Sawyer, Sons, & Co.	Germany, 100 cks. D. Storer & Sons
" 54 J. Barber & Co.	Gypsum — Germany, 20 t. Brasch & Rothenstein	" 500 C. Lamb & Co.	" 13 R. W. Greeff & Co.
Copperas — Germany, 4 cks. A. & M. Zimmermann	Kainit — Germany, 90 t. F. W. Berk & Co., Ltd.	Holland, 100 R. W. Greeff & Co.	Holland, 30 pks. Pprps. Dowgate Dk.
Cream of Tartar — Holland, 20 cks. Kirkpatrick & Co.	Lead Acetate — France, 10 cks. R. W. Greeff & Co.	Sodium Acetate — Holland, 21 cks. H. Lorenz	Germany, 160 M. Ashby, Ltd.
France, 5 B. & F. Wf. Co.	Holland, 17 Beresford & Co.	France, 50 J. Harrison	Holland, 107 J. Matton
Dextrine — Holland, 10 J. Barber & Co.	Litharge — Germany, 3 cks. H. Lambert	Sodium Hypsulphite — Holland, 19 cks. H. Wallace & Co.	" 200 J. Matton
Dyestuffs — Argols Italy, 500 bgs. Thames S. T. & L. Co.	" 4 Tudor, Mash, & Co.	Sodium Prussiate — Belgium, 54 cks. Blagden, Waugh & Co.	" 500 Brit. Anti-Fouling Co.
" 211 Bailey & Leatham, Ltd.	Lithopone — Holland, 20 cks. Wilkinson, Heywood, & Co.	Sodium Sulphate — Holland, 30 cks. H. Wallace & Co.	Holland, 50 Burrell & Co.
Cochineal — Canaries, 25 bgs. W. M. Smith & Sons	Manganese — Germany, 24 c. Taylor Bns.	Starch — Holland, 80 cs. Hernu, Peron, & Co.	U. States, 100 M. Ashby, Ltd.
" 20 Sperling & Williams	Manganese Borate — Germany, 20 kgs. Petri Bns.	" 80 C. Tennant, Sons, & Co.	Zinc Sulphate — Germany, 32 cks. Burgoyne & Co.
" 14 Hendrey & Martin	Holland, 17 cks. G. Rahn & Co.	U. States, 50 bris. Beck & Pollitzer	
Cutch — Singapore, 200 bxs. Hoare, Wilson & Co.	Manganese Ore — France, 300 t. Union L. Co., Ltd.	" 25 cts. 25 cts. Beck & Pollitzer	LIVERPOOL. Week ending December 9th.
" 700 cs. Borneo Co.	Manure — Germany, 10 t. P. Hecker & Co.	Holland, 880 cs. Little & Johnston	Acetate of Lime — Montreal, 347 bgs.
Extracts — U. States, 50 bxs. W. Burton & Sons	" 38 E. Groschke	U. States, 400 bgs. R. G. Hall & Co.	Albumen — Alexandretta, 10 cs.
France, 35 cks. B. & F. Wf. Co.	E. Indies, 100 A. Hunter & Co.	" 250 Ohlenschlager Bns.	Naples, 4 cs.
" 3 H. Johnson & Sons	Methyl Alcohol — Sweden, 9 dms. Lister & Biggs	Belgium, 404 cs. T. H. Lee	Rouen, 4 cks. Co-op. Wholesale Society, Ltd.
" 2 J. Harrison	France, 40 cks. R. D. Lyon	" 318 Becker & Wagner	Ammonium Nitrate — Rotterdam, 80 cks.
Holland, 7 pks. J. Norrenberg & Co.	Germany, 6 dms. Tingle, Jacobs, & Co.	" 26 C. Tennant, Sons, & Co.	Ammonium Sulphate — Rotterdam, 26 cks.
Austria, 70 bris. J. & R. Grant	Mica — E. Indies, 63395 W. M. Smith & Sons	Germany, 230 J. Barber & Co.	Arsenic — Antwerp, 12 cks.
Denmark, 2 cks. M. D. Co.	" 5 cs. "	Belgium, 665 Horne & Co.	Bone Meal — Bombay, 1,000 bgs.
Austria, 80 Boutcher, Mortimore & Co.	Ochre — France, 30 cks. Hemingway & Co.	" 42 Philipps & Graves	Boracite — Bremen, 23 cks.
" 102 bris. Cleeve Hooper	" 36 W. Harrison & Co.	Germany, 6 cks. T. H. Lee	Borates — Galveston, 4,856 sks.
Gambier — Singapore, 709 pks. J. Swire & Sons	" 21 J. Flack	Holland, 20 cs. Philipps & Graves	Castor Oil — Genoa, 24 cs.
" 470 Beresford & Co.	Holland, 17 Philipps & Graves	Belgium, 260 E. & T. Pink	Chemicals (otherwise undescribed) Hamburg, 10 cs.
" 251 Prop. Hay's Wf.	Oxalic Acid — Belgium, 10 cks. John Cockerill Line	Stearine — France, 140 bgs. G. Boor & Co.	Rotterdam, 1 ck.
" 460 W. Balchin, Ltd.	Phosphates — U. States, 497 Seaward Bns.	Norway, 50 cks. Mordaunt Bns.	Cod Oil — St. John's, Nfld., 32 cks. J. J. Langley
" 1,995 bls. S. Figgis & Co.	Phosphate Rock — Belgium, 230 t. Odams Manure & Chemical Co.	Holland, 318 bgs. Palmer & Co.	Cottonseed Oil — New York, 50 bris.
" 917 Brinkmann & Co.	" 160 Lawes Chemical Manure Co.	Belgium, 13 Kumpff & Eckenstein	Cream of Tartar — Bordeaux, 28 cks.
" 721 655 pks. Brown & Elmslie	Phosphoric Acid — Germany, 4 cs. Burgoyne & Co.	Sulphur — Spain, 200 t. J. Forster	Oporto, 5
" 1,532 Prop. Hay's Wf.	Pitch — B.W.I., 354 bris. H. Grey, junr.	Germany, 200 bris. Linck Moeller, & Co.	St. Nazaire, 21
" 1,537 W. Schutte	" 47 Scholefield, Goodman & Co.	Tartar — Italy, 29 cks. B. Jacob & Sons	Dyestuffs — Argols Oporto, 64 cks.
" 1,056 bgs. J. W. Cook & Co.		Tartaric Acid — Holland, 10 cks. Kirkpatrick & Co.	Las Palmas , 13 bgs. Roberts, Evans & Co.
Indigo — E. Indies, 10 cts. F. Huth & Co.		" 15 B. & F. Wf. Co.	
" 8 Walker, Munroe & Co.		Ultramarine — Germany, 24 cks. T. Hamilton & Co.	
" 9 Hall & Wilson			
Myrabolams — E. Indies, 2,000 pks. P. & O. Co.			
Saffron — Spain, 1 cs. Richardson, Spence & Co.			
" 1 C. S. Lovell			
Shumac — Italy, 120 bgs. T. Barter & Co.			
Tanners' Bark — Belgium, 40 t. H. K. Daniels			
" 85 Lon. & Til. L. Co.			

Gd. Canary,	1 bx.	S. L. Behrens & Co
Cutch		
Amsterdam,	75 bxs.	
Extracts		
New York,	22 brls.	
Logwood		
Yucatan,	462 t.	
Madder		
Rotterdam,	2 cks.	
Saffron		
Barcelona,	1 cs.	
Shumac		
Palermo,	85 bgs.	
Vaionia		
Patras,	400 bgs.	
Farina—		
Fiume,	120 bgs.	
Stettin,	20	Makin & Bancroft
Gelatine—	50	
Rouen,	5 cs.	Co-op. W'sale Society, Ltd.
Glucose—		
New York,	100 brls.	
"	200	T. M. Duche & Sons
Glue—		
Rotterdam,	225 bgs. 3 bls.	
Fiume,	200	
Rouen,	10 cks.	Co-op. W'sale Society, Ltd.
St. Nazaire,	36	20 cs. T. Robinson & Son
Boston,	5 kgs. 12	
Gypsum—		
Bremen,	50 bgs.	
Iron Oxide—		
Gijon,	350 bgs.	W. Pope
Lactic Acid—		
Boston,	5 kgs. 10 brls.	J. Taylor & Co.
Lamp Black—		
New York,	20 brls.	B. R. Vickers & Sons
Lithopone—		
Rotterdam,	60 cks.	
Magnesian—		
Kimassi,	1,585 t. 250 sks.	Tennants & Co.
Manganese—		
Hamburg,	56 cks.	
Mineral White—		
Fiume,	209 bgs.	
Paint—		
New York,	5 brls.	
Amsterdam,	40	
Paraffin Scale—		
New York,	577 brls.	Thompson & Bedford
"	90	Anglo-Am. Oil Co.
Rangoon,	800 bxs.	
Baltimore,	200 brls.	
Philadelphia,	50cs.	Anglo-Am. Oil Co.
Pitch—		
Amsterdam,	21 cks.	
Potash—		
Montreal,	33 brls.	
Pumice stone—		
Messina,	65 brls. 142 bgs.	
Pyrites—		
Huelva,	6,568 t.	Matheson & Co.
Rosin—		
Charleston, S.C.,	1,033 brls.	Makin & Bancroft
Brunswick, Ga.,	3,970	
Hamburg,	6 bgs.	
Salt—		
Hamburg,	1 bg.	
N. Orleans,	250 sks.	J. J. Harmon
Saltpetre—		
Hamburg,	40 kgs. 4 cks.	
Soap—		
Halifax,	117 cs.	Lever Bros.
Bordeaux,	10	
Bari,	250	
Naples,	240	
Baltimore,	25	
Philadelphia,	63	600 bxs.
Soapstone—		
Bordeaux,	300 bgs.	Geo. G. Blackwell, Son & Co.
Sodium Bicarbonate—		
Hamburg,	1 ck.	
Starch—		
Rotterdam,	75 cs.	
Hamburg,	344	25 cks.
Boston,	110 brls.	

Tallow—		
New York,	36 brls.	J. W. de Silva
Boston,	100	
Tannic Acid—		
Rotterdam,	2 cks.	
Tartaric Acid—		
Hamburg,	3 cks.	
Rotterdam,	4	
Turpentine—		
Brunswick, Ga.,	1,425 brls.	
Ultramarine—		
Bremen,	5 cks.	
Varnish—		
Boston,	49 brls.	W. H. Staynes & Smith
Waste Salt—		
Hamburg,	2,540 bgs. 80 t.	
White Lead—		
Rotterdam,	13 cks.	
Antwerp,	14 brls.	
Wood Pulp—		
Montreal,	1,170 bls.	
Boston,	125 bxs. 2,088 rolls	Thin & Sinclair
Zinc Oxide—		
Rotterdam,	60 cks.	
Zinc Skimmings—		
New York,	11 cks.	
Zinc White—		
Rotterdam,	138 cks.	
Hamburg,	40	

MANCHESTER

Week ending December 11th.

Acetic Acid—		
Antwerp,	40 blns.	
Alizarine—		
Rotterdam,	28 cks.	
	42 brls.	
Alum Cake—		
Rotterdam,	25 cks.	
Ammonium Acetate—		
Rotterdam,	3 brls.	
Ammonium Chloride—		
Rotterdam,	4 cks.	
Aniline Salts—		
Rotterdam,	12 cks.	
Barium Chloride—		
Rotterdam,	4 cks.	
Barytes—		
Antwerp,	250 bgs.	
Rotterdam,	13 cks.	
Benzole Acid—		
Antwerp,	2 cs.	
Beta-Naphthol—		
Rotterdam,	1 brl.	
Chemicals (otherwise under.)—		
Hamburg,	37 cks.	17 pks.
Rotterdam,	3 brls.	
Chromium Acetate—		
Rotterdam,	3 brls.	
Colours—		
Ghent,	5 cs.	
Antwerp,	2 brls.	
	10 cks.	
Hamburg,	4	10
Rotterdam,	84 brls. 39	14 bxs.
Dimethylamine—		
Rotterdam,	4 cks.	
Farina—		
Rotterdam,	500 bgs.	
Hamburg,	1,140	
Glue—		
Antwerp,	10 bls.	
Rotterdam,	240 bgs. 14 cs.	
Indigo—		
Rotterdam,	2 brls.	
Lamp Black—		
Gothenburg,	6 cks.	
Limestone—		
Antwerp,	3 crts. 10 cs.	
Ghent,	3	
Litharge—		
Rotterdam,	65 cks.	
Methylene—		
Antwerp,	11 cks.	
Ochre—		
Treport,	112 cks.	
Paraffin Wax—		
New York,	690 cs.	
Phosphates—		
Rotterdam,	11 cks.	

Pitch—		
Antwerp,	57 cks.	
Potash—		
Hamburg,	73 cks.	
Rotterdam,	2	
Potassium Chlorate—		
Gothenburg,	20 cks.	140 kgs.
Potassium Prussiate—		
Antwerp,	34 cks.	
Sodium Acetate—		
Antwerp,	28 cks.	
Starch—		
Hamburg,	60 dms.	
New York,	307 cs.	
Antwerp,	102	
Sulphuric Acid (Anhydride)—		
Rotterdam,	10 cks.	
Tallow—		
New York,	50 hds.	
Tar Salts—		
Hamburg,	1 ck.	
Tartaric Acid—		
Rotterdam,	18 cks.	
Ultramarine—		
Rotterdam,	4 cks.	
Varnish—		
Sydney,	32 cs. Sheffield Varnish Co., Ltd.	
Waste Salt—		
Hamburg,	1,000 bgs. and qty.	
White Lead—		
Antwerp,	8 cks.	
Whiting—		
Gothenburg,	150 bgs.	
Wood Pulp		
Gothenburg,	313 bls.	45 bdls.
Zinc Ashes—		
Antwerp,	12 cks.	
Zinc Oxide—		
Rotterdam,	103 brls.	
Zinc White—		
Rotterdam,	10 cks.	

HULL.

Week ending December 11th.

Acids—		
Gothenburg,	1 cs.	Wilson, Sons, & Co., Ltd.
Alizarine—		
Rotterdam,	11 brls.	W. & C. L. Ringrose
Alkali—		
Rotterdam,	1 ck.	W. & C. L. Ringrose
Aluminium—		
New York,	40 cs.	Wilson, Sons, & Co., Ltd.
Antimony—		
Hamburg,	11 cs.	Wilson, Sons, & Co., Ltd.
Asbestos—		
Rotterdam,	7 bdls.	W. & C. L. Ringrose
Barytes—		
Antwerp,	47 cks.	Bailey & Leatham, Ltd.
Rotterdam,	133	W. & C. L. Ringrose
Bremen,	85	
Bone Ash—		
Paysandu,	652 t.	
Chemicals (otherwise undescribed)		
Bremen,	15 pks.	Veltmann & Co.
	2 cs.	Wilson, Sons, & Co., Ltd.
Hamburg,	28 pks.	
Cod Oil—		
Bergen,	35 cks.	Wilson, Sons, & Co., Ltd.
Hamburg,	15 brls.	
Aalesund,	100	
Colours—		
Bremen,	40 cks.	Wilson, Sons, & Co., Ltd.
Rotterdam,	7 pks.	
Antwerp,	2 cs.	Hanger, Watson, & Harris
Hamburg,	185 cks.	Wilson, Son, & Co., Ltd.
Antwerp,	2	
Danzig,	6	
Rotterdam,	6	Hutchinson & Son
"	42 pks.	W. & C. L. Ringrose
"	11 brls. 22 cs.	
Cottonseed Oil—		
New York,	180 brls.	Wilson, Sons, & Co., Ltd.
Farina—		
Stettin,	40 bgs.	Wilson, Sons, & Co., Ltd.
Harlingen,	46	W. & C. L. Ringrose
Hamburg,	100	Wilson, Sons, & Co., Ltd.
Harlingen,	502 bls.	Hutchinson & Son
"	100	
Glucose—		
New York,	250 brls.	
Rotterdam,	500 bgs.	Hutchinson & Son
Boston,	80	
Glue—		
Dunkirk,	55 cks.	Wilson, Sons, & Co., Ltd.
Hamburg,	69 pks.	
Rouen,	114 bgs. 5 cks.	Rawson & Robinson
Kaolin—		
Amsterdam,	20 cks.	Hutchinson & Son
Lithopone—		
Amsterdam,	2 cks.	Hutchinson & Son
Ochre—		
New York,	208 brls.	
Rouen,	6 cks.	Rawson & Robinson
Phosphate—		
Ghent,	80 t.	
Pitch—		
Rotterdam,	166 cs.	W. & C. L. Ringrose
Plumbago—		
Stettin,	5 cks.	Wilson, Sons, & Co., Ltd.
Potash—		
Dunkirk,	106 cks.	Wilson, Sons, & Co., Ltd.
Rosin—		
Brunswick, Ga.,	1,080 brls.	G. & J. Rawstorn, Ltd.
Saltpetre—		
Hamburg,	12 bgs.	Wilson, Sons, & Co., Ltd.
Soda—		
Antwerp,	10 bgs.	
Ghent,	200	Wilson, Sons, & Co., Ltd.
Starch—		
Bremen,	1,711 cs.	Veltmann & Co.
Antwerp,	252	Bailey & Leatham, Ltd.
New York,	100 bgs.	
Rotterdam,	220 cs.	Reckitt & Sons
Ghent,	86	Wilson, Sons, & Co., Ltd.
Amsterdam,	40	W. & C. L. Ringrose
Tallow—		
Dunkirk,	84 cks.	Wilson, Sons, & Co., Ltd.
New York,	130 tcs.	
Tannic Acid—		
Rotterdam,	2 cks.	Hutchinson & Son
Tartaric Acid—		
Rotterdam,	15 cks.	Hutchinson & Son
Treacle—		
New York,	700 brls.	Wilson, Sons, & Co., Ltd.
Turpentine—		
Brunswick, Ga.,	2,068 brls.	G. & J. Rawstorn, Ltd.
Libau,	53	Helmsing & Son
Ultramarine—		
Bremen,	12 cks.	
Rotterdam,	8	Hutchinson & Son
White Lead—		
Amsterdam,	82 cks.	Hutchinson & Son
Dunkirk,	16	Wilson, Sons, & Co., Ltd.
Antwerp,	63	Bailey & Leatham, Ltd.
Rotterdam,	10	W. & C. L. Ringrose
Amster am,	95 cs.	
Rotterdam,	32 cks.	Hutchinson & Son
Wood Pulp—		
Christiania,	1,008 bls.	Wilson, Sons, & Co., Ltd.
Christiansand,	200 bls.	
Gothenburg,	630	
Zinc Ashes—		
Amsterdam,	4 cks.	Hutchinson & Son
	90 ingots	

GLASGOW.

Week ending December 16th.

Acetate of Lime — Philadelphia, 460 bgs.	
Acetic Acid — Rotterdam, 7 cks.	J. Rankine & Son
Amyl Alcohol — Hamburg, 1 cs.	
Antimony — Rouen, 49 pks.	
Antimony Salts — Hamburg, 1 cs.	
Barium Chloride — Rotterdam, 4 cks.	J. Rankine & Son
Barium Sulphate — Antwerp, 150 bgs.	
Barytes — Rotterdam, 39 cks.	J. Rankine & Son
	224 pks.
Hamburg, 20 cks.	100 bgs.
Castor Oil — Antwerp, 58 cks.	
Chemicals (otherwise undescribed) Rotterdam, 3 cs.	J. Rankine & Son
Hamburg, 58 cks.	
Chromium Acetate — Rotterdam, 1 cs.	J. Rankine & Son
Cod Oil — St John's, 1 cs.	1 brl.
Colours — Antwerp, 7 cks.	
Rotterdam, 37 pks.	
Hamburg, 5 cks.	1 cs.
Cottonseed Oil — New York, 225 brls.	
Rotterdam, 15	J. Rankine & Son
Dyestuffs — Alizarine Rotterdam, 19 cks.	J. Rankine & Son
	51 brls.
Aniline Rotterdam, 38 brls.	J. Rankine & Son
	8 bxs.
Aniline Salts Rotterdam, 11 cks.	J. Rankine & Son
Argols Bordeaux, 60 cks.	
Shumac Palermo, 100 bgs.	
Farina — Delfsryhl, 1,350 bgs.	J. Rankine & Son
Glucose — Philadelphia, 200 brls.	
Glue — Naples, 100 bgs.	
New York, 96 brls.	
Nantes, 100 pks.	J. Rankine & Son
Rotterdam, 60 bgs.	
Rouen, 163 pks.	

Litharge — Rotterdam, 29 cks.	J. Rankine & Son
Manganese Chloride — Rotterdam, 7 cks.	J. Rankine & Son
Potash — Rotterdam, 67 cks.	J. Rankine & Son
	4 pks.
Rouen, 71	
Potash Salts — Rotterdam, 1 cs.	J. Rankine & Son
Potassium Bromide — Hamburg, 7 cs.	
Potassium Nitrate — Hamburg, 56 cks.	
Pumice Stone — Messina, 6 cks.	
Pyrites — Huelva, 1,689 t.	Tharsis Co.
Rosin — Rotterdam, 6 cks.	J. Rankine & Son
Sodium Acetate — Rouen, 20 pks.	
Sodium Salicylic Hamburg, 2 cs.	
Sodium Sulphate — Antwerp, 18 cks.	
S. arch — Antwerp, 100 cs.	
Stearine — Rotterdam, 17 cks.	J. Rankine & Son
	7 bgs.
Talc — Naples, 5 cs.	
Tallow — Rotterdam, 15 tcs.	J. Rankine & Son
	140
Philadelphia, 140	
Tartar — Bordeaux, 2 cks.	
Tartaric Acid — Rotterdam, 27 cks.	J. Rankine & Son
Treacle — New York, 100 brls.	
Philadelphia, 850	100 hf.-brls.
Boston, U.S.A., 100	
Turpentine — Antwerp, 25 cks.	
Ultramarine — Rotterdam, 4 cs.	J. Rankine & Son
Yarnish — New York, 103 brls.	
Antwerp, 1 ck.	1 cs.
Waste Salt — Hamburg, 547 cks.	
White Lead — Rotterdam, 80 cks.	J. Rankine & Son
	5 pks.
Wood Pulp — Gothenburg, 29 bls.	
Christiania, 2,056	
Boston, U.S.A., 70	

Zinc Sulphate — Rotterdam, 5 brls.	J. Rankine & Son
Zinc White — Rotterdam, 20 pks.	J. Rankine & Son

TYNE.

Week ending December 11th.

Acetic Acid — Rotterdam, 1 ck.	Tyne S. S. Co.
Antimony Ore — Antwerp, 1,000 bgs.	Tyne S. S. Co.
Arsenic — Antwerp, 3 brls.	Tyne S. S. Co.
Barium Chlorate — Rotterdam, 310 bgs.	Tyne S. S. Co.
Castor Oil — Antwerp, 6 brls.	Tyne S. S. Co.
Chemicals (otherwise undescribed) Rotterdam, 20 tins	Tyne S. S. Co.
Colours — Ghent, 8 brl.	Tyne S. S. Co.
Rotterdam, 2	
Antwerp, 2 cks.	"
Limestone — Antwerp, 9 crts.	Tyne S. S. Co.
Pitch — Rotterdam, 9 cks.	Tyne S. S. Co.
Pyrites — Huelva, 5,123 t.	Tharsis Sulphur & Copper Co.
Soap — Rotterdam, 13 cs.	Tyne S. S. Co.
Sodium Nitrate — Caleta Buena, 2,410 t.	
White Lead — Antwerp, 13 cks.	Tyne S. S. Co.
Wood Pulp — Christiania, 160 bls.	
Zinc Ashes — Antwerp, 1 ck.	Tyne S. S. Co.

GOOLE.

Week ending December 8th.

Acetic Acid — Rotterdam, 2 cs.	
Alizarine — Rotterdam, 139 cks.	25 cs.
Alkali — Calais, 5 cks.	
Alum — Rotterdam, 22 bgs.	
Antwerp, 42 cks.	
Aniline — Rotterdam, 220 cks.	75 cs.
Barytes — Rotterdam, 12 cks.	
Colours — Hamburg, 70 cks.	
Calais, 18	

Dyestuffs (otherwise undescribed) Boulogne, 54 cks.	11 cs.
Amsterdam, 70	
Extracts (Dyeing) — Amsterdam, 4 cks.	2 cs.
Farina — Hamburg, 410 bgs.	
Delfsryhl, 400	
Glucose — Hamburg, 24 cks.	
Calais, 100 bgs.	
Olue — Rotterdam, 6 cks.	1 pk.
Boulogne, 6 cks.	
Indigo — Rotterdam, 2 cks.	
Logwood — Belize, 363 t.	
Madder — Rotterdam, 11 cks.	1 cs.
Plumbago — Boulogne, 1 ck.	1 ts.
Potash — Calais, 23 dls.	
Dunkirk, 13 cks.	20
Saltpetre — Rotterdam, 183 bgs.	
Soap — Rotterdam, 3 ts.	
Boulogne, 1	
Soda — Antwerp, 1 ck.	
Starch — Ghent, 127 cs.	
Tartar — Rotterdam, 2 cks.	
Varnish — Amsterdam, 1 cs.	
Waste Salt — Hamburg, 45 t.	

GRIMSBY.

Week ending December 11th.

Aniline Dyes — Antwerp, 55 pks.	
Caoutchouc — Rotterdam, 1 cs.	
Hamburg, 4	
Chemicals (otherwise undescribed) Hamburg, 9 cs.	
Rotterdam, 2 cks.	
Colours — Antwerp, 3 cks.	7 cs.
Hamburg, 28	27
Rotterdam, 8	29
Dyestuffs (otherwise undescribed) Dieppe, 5 cks.	
Plumbago — Hamburg, 1 cs.	
Pyrites — Hamburg, 2 cs.	
Wood Pulp — Helsingborg, 80 bls.	
Zinc Ashes — Antwerp, 6 cks.	

EXPORTS OF CHEMICAL PRODUCTS

OF

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.**LONDON.**

Week ending December 15th.

Alkali — Melbourne, 5 c.	£12
Alum — Pt. Elizabeth, 1 t.	16 c.
Alum Waste — Calcutta, 40 t.	3 c.
Ammonia — Bremerhaven, 11 pks.	£26
Huelva, 1 t.	2 c.
Pt. Elizabeth, 16	40
Ammonium Carbonate — Yokohama, 4 t.	£101
Rangoon, 33 cs.	51
Stockholm, 3	12 c.
Odessa, 40 kgs.	52
New York, 35 pks.	180
Melbourne, 20 cs.	28
Paris, 4	18

Ammonium Chloride — Sydney, 1 t.	11 c.
Melbourne, 1	4
Lisbon, 11	
Salonica, 2	
Constantinople, 2	10
Durban, 5 kgs.	73
Cologne, 16 cks.	9
Ammonium Sulphate — Bremen, 50 t.	£450
Hamburg, 50	450
Antwerp, 50	11 c.
Honolulu, 550	1
Valencia, 65	4,637
Ostend, 170	1,530
Jersey, 22	19
Ghent, 25	1
Arsenic — Hiogo, 1 t.	£24
Yokohama, 1	24
Barium Binoxide — Venice, 10 t.	4 c.
Bisulphite of Lime — Pt. Chalmers, 1 t.	18 c.

Bone Ash — Auckland, 12 c.	£19
Durban, 1 t.	22
Boric Acid — New York, 3 t.	£105
Borax — Lyttelton, 1 t.	4 c.
Townsville, 2	5
Melbourne, 2	5
Madras, 5	16
Fremantle, 9	11
Auckland, 1	1
E. London, 5 cs.	29
Carbolic Acid — Philadelphia, 4 dms.	6 cs.
Yokohama, 150	£186
Melbourne, 1	469
Boston, 16 cks.	1
Antigua, 16 pks.	22
Pt. Elizabeth, 5	21
Carbonic Acid Gas — Rotterdam, 3 cyldrs.	£15
Jersey, 54 tubes	20

Caustic Potash — Constantinople, 1 t.	1 c.
Auckland, 1	5
Wellington, 1	24
Caustic Soda — Sydney, 7 c.	£4
Normanton, 2 t.	0
Melbourne, 19	23
Durban, 19	6
Pt. Elizabeth, 19	6
Auckland, 5	12
Chemicals (otherwise undescribed) Colombo, 7 cs.	£66
Dunkirk, 24 cks.	27 dms.
Rotterdam, 49	189
Dusseldorf, 10	45
Sydney, 7	38
Treport, 30	100
Melbourne, 14	66
Bombay, 10	4 pks.
Calcutta, 10 c.	30
Havre, 10 cks.	37
Antwerp, 4	24
Brussels, 4	24
Hiogo, 4	24

Gothenburg,	2	13
Genoa,	63	351
Christiania,	5 cks.	62
Hamburg,	5	59
Citric Acid—		
Fremantle,	1 c.	67
Reval,	2 t. 5	248
Melbourne,	10	67
Hioho,	10	58
Lisbon,	1	120
Calcutta,	2 cs.	11
Dunedin,	1	6
Durban,	3 kgs. 2	28
Napier,	1	7
Coal Products—		
Aniline		
Fremantle	1 cs.	68
Calcutta,	1	38
Melbourne,	3	45
Ghent,	1 ck.	15
Aniline Oil		
New York,	31 dms.	6980
Aniline Salts		
New York,	44 pks.	6320
Anthracene		
Dusseldorf,	480 cks.	6985
Benzine		
Sydney,	20 dms.	65
Auckland,	20	12
Otago,	20	6
Benzol		
Rotterdam,	122 cks.	6472
Benzoline		
Auckland,	20 dms.	67
Naphtha		
Sydney,	50 dms.	631
Treport,	20 brls.	92
Melbourne,	50	31
Naphthaline		
Cologne,	6 cks.	654
Antwerp,	400 bgs.	217
Pitch		
Dunkirk,	1,262 t.	61,430
Antwerp,	957	1,059
St. Nazaire,	1,276	1,360
Sydney,	5 brls.	8
Newport News,	175 cks.	154
Alexandria,	200	57
Ancona,		905
Pyridine		
Rotterdam,	12 brls.	6150
Antwerp,	25 cks.	380
Tar		
Pt. Elizabeth,	399 dms.	637
Melbourne,	50 30 brls. 10 rnlts	48
Durban,	300	18
Trinidad,	22 1/2 10	20
Hamburg,	85	33
Telusai		
Rotterdam,	75 runlets.	6390
Coal Products (otherwise undes.)—		
E. London,	1 ca.	611
Adelaide,	50 dms.	9
Copper Sulphate—		
Barbadoes,	3 c.	64
Sourabaya,	2 t. 19	47
Piræus,	2 5	41
Canterbury,	2 10	41
Treport,	10	175
Cream of Tartar—		
Cape Town,	10 cs.	639
Dunedin,	2 t. 13 c.	201
Yokohama,		7 kgs 20
Melbourne,	5	387
Durban,	4	15
Disinfectants—		
Wellington,	10 cs.	626
Brisbane,	29	51
Hamburg,		25 cks. 123
Fremantle,	2	1
Melbourne,	20 8	85
Calcutta,	632 dms.	62
Madras,	13 pks.	10
Adelaide,	39	67
Guano		
Demerara,	100 t.	61,000
Hydrochloric Acid—		
Durban,	10 c.	610
Hypo sulphite of Lime—		
New York,	10 cs.	6154
Manure—		
Adelaide,	250 t.	6640
Jersey,	247	1,112
Colombo,	60 8 c.	550
Nitric Acid—		
Jersey,	21 crbys	642
Oxalic Acid—		
Lisbon,	1 ck.	611
Yokohama,	1 t.	30
Phosphate—		
Sourabaya,	20 t.	645
St. Kitts,	20	42
Grenada,	20	25

Phosphorus—		
Pt. Chalmers,	8 c.	649
Potassium Bichromate—		
Wellington,	1 t. 4 c.	648
Potassium Chlorate—		
Dunedin,	6 kgs.	611
Potassium Cyanide—		
Adelaide,	2 t. 13 c.	6240
Bombay,	2	12
Delagoa Bay,	3	325
Sydney,	25 cs. 210	150
Fremantle,	1 3	466
Durban,	50	796
Melbourne,	7	
Potassium Prussiate—		
Rotterdam,	19 cks.	6251
Calcutta,	6 c.	17
Salt Cake—		
Ghent,	150 t.	6175
Saltpetre—		
Colombo,	1 t. 3 c.	624
Dunedin,	10	10
Pt. Elizabeth,	1 2	24
B. Ayres,	19	18
Gibraltar,	2 10	48
Sheep Dip—		
Dunedin,	40 dms.	621
Pt. Elizabeth,	4,999	625
Calcutta,	100 pks.	62
Durban,	2,000	410
Soda—		
Pt. Elizabeth,	2 t. 5 c.	68
Soda Ash—		
Lyttelton,	2 t. 11 c.	611
Soda Crystals—		
Pt. Elizabeth,	12 t. 1 c.	631
Soda Salts—		
New York,	25 brls. 5 bgs.	6150
Sodium Bicarbonate—		
Yokohama,	10 c.	614
Auckland,	1 t	8
Gisborne,	3 5	15
Cape Town,	10	4
Pt. Elizabeth,	2 4	16
Sodium Hyposulphate—		
Auckland,	1 t. 2 c.	620
Sulphur—		
Pt. Elizabeth,	225 kgs.	679
Sulphuric Acid—		
Colombo,	1 t. 10 c.	615
Pt. Elizabeth,	6 4	39
Durban,	2 10	10
Superphosphates—		
Auckland,	30 t.	690
Tartaric Acid—		
Malta,	2 c.	618
Wellington,	1 t. 5	18
Melbourne,	1 t.	114

LIVERPOOL.

Week ending December 15th.

Alum—		
Smyrna,	5 t.	622
Alexandria,	1 15 c.	9
Alexandretta,	2 13	12
Alumina Sulphate—		
Lisbon,	10 t.	634
Aluminous Cake—		
Melbourne,	6 t. 1 c. 2 q.	619
Ammonium Carbonate		
Odense,	1 t.	628
Rotterdam,	10 c. 1 q.	14
Rio de Janeiro,	10	14
Sydney,	1	34
Marseiller,	1 10	40
Genoa,	2 10	70
New York,	3 10	89
Hamburg,	4 15	137
Antwerp,	1 9	43
Leghorn,	1	25
Christiania,	2 12	82
Konigsberg,	1 10	44
Copenhagen,	2 2	18
Ammonium Chloride—		
Christiania,	10 c.	612
Genoa,	2 t.	40
Alexandria,	1	3
Trieste,	2	59
Constantinople,	12	17
Ammonium Sulphate—		
Las Palmas,	7 t. 10 c.	668
Charente,	100	875
New York,	25 9	231
Baltimore,	91 9	841
St. Kitts,	25 6	246
Colombo,	4 8 2 q.	39

Genoa,	30 8	250
Valencia,	175 12 2	1,460
Demerara,	246 4	7,129
Newport News,	50 18 2	452
Bleaching Powder—		
Amsterdam,	33 cks.	
Ancona,	11	
Baltimore,	56	
Bilbao,	20	
Bombay,	25 cs.	
Boston,	15 brls.	
Dunkirk,	32	
Genoa,	75	
Ghent,	20	
Havana,	10	
Leghorn,	62	
Naples,	462	
Newport News,	441	
New York,	209	
Philadelphia,	4	
Piræus,	42	
Portland,	10	
Rio de Janeiro,	163	
Rouen,	18 cs.	
Santos,	6	
Vigo,	2 t.	654
Boracic Acid—		
Antwerp,	3	65
Hioho,	3	65
Yokohama,	3	65
Borax—		
Ancona,	10 c.	68
Piræus,	1 t. 2	24
Toronto,	12 10 3	213
Malta,	12 kgs.	60
Sydney,	1 2	31
Constantinople,	2	7
Hamburg,	4 19	75
Antwerp,	2	32
Rotterdam,	6 12 4 q.	98
Genoa,	1 2	14
Carbolic Acid—		
Yokohama,	5 t.	6332
Genoa,	8 c. 1 q.	25
Baltimore,	1 7 3	113
Rotterdam,	16	876
Hioho,	3	145
Hamburg,		3
Caustic		
Mollendo,	20 dms.	
Caustic Soda—		
Adelaide,	45 dms.	
Alexandria,	23 40 kgs.	
Algoa Bay,	25	
Alicante,	10	
Amsterdam,	81	
Barcelona,	330 60 cks.	
Bilbao,	30	
Bombay,	10	
Bordeaux,	5	
Boston,	50	
B. Ayres,	50	
Callao,	40	
Catania,	20	
Drammen,	20	
E. London,	20	
Fiume,	45	
Genoa,	221	
Hamburg,	20 20 kgs.	
Hioho,	75	
Hong Kong,	35	
Jaffa,	70	
Leghorn,	95 23 cks.	
Malaga,	30	
Melbourne,	14	
Messina,	25	
Monterey,	7	
M. Video,	40	
New York,	335	
Odessa,	25	
Palermo,	10	
Pernambuco,	100	
Philadelphia,	120	
Pimental,	20	
Pt. Natal,	4	
Rangoon,	10	
Rio de Janeiro,	27	
Rotterdam,	215	
Rouen,	312	
St. John's, N B,	50	
Santos,	28	
Seville,	50	
Shanghai,	4	
Stockholm,	4	
Tarragona,	60	
Valencia,	10	
Venice,	148	
Zante,	20	
Chemicals (otherwise undescribe.)		
New York,	5 c.	615
Demerara,	3 t. 8	120
Piræus,	3 6	40
Boston,	1 12	46
Salonica,	1	37
Pt. Natal,	5	8

China Clay—			
Baltimore,	150 t.		
Bombay,			318 cks.
Calcutta,	35		
Lisbon,	5	5 c.	
Newport News,	67		
New York,			200
Philadelphia,			320
Stockholm,	540 bgs.		
Coal Products—			
Alizarine Colours			
New York,	5 cks.		
Aniline Dyes			
St. John's Nfd.,	1 cs.		
Anthracene			
Rotterdam,	44 brls.		
Croosote Salts			
Antwerp	338 bgs.		
Naphtha			
New York,	3 pks.		
Naphthaline			
New York,	10 cks.		
Naphthol			
New York,	10 cks.		
Pitch			
La Rochelle,	946 t.		
Nantes,	161		
Philadelphia,	100 brls.		
Rouen,	14 cks.		
Shanghai	3 dms.		
Tar			
Accra,	60 pks.		
Hamburg,	238 brls.		
Philadelphia,	32 t. 9 c.		
Coal Products (otherwise undes.)—			
Boston,	119 pks.		
Cobalt Nitrate—			
Nagasaki,	2 c.		659
Copper Sulphate—			
Cette,	75 t. 13 c.		61,191
Konigsberg,	4 17	3 q.	63
Palermo,	5 18		94
Messina,	4 1		66
Catania,	4 18		77
Rouen,	43 13	2	740
Fremantle,	33		464
Alexandretta,	10		8
Naples,	10 2		156
Vigo,	6		100
Bombay,	2 10		40
Syria,	10 2		153
Christiania,	1		18
Ghent,	4 19 1		83
Tarragona,	10 3		154
Venice,	23 17		361
Talcahuano,	17 15 1		289
Bombay,	18 15		295
Havre,	19		15
Rio de Janeiro,	1 14		28
Rouen,	19 19		320
Bourgas,	2 5 3		39
B. Ayres,	2 8		37
Antwerp,	9 5		145
Trieste,	80 2 1		1,262
Patras,	23 5		510
Genoa,	31 5 1		490
Bordeaux,	195 3 2		3,112
Copperas			
Bourgas,	3 t. 10 c. 1 q.		67
Tampico,	4		9
Croosote Salts—			
Antwerp,	25 t		635
Disinfectants—			
Colon,	75 dms.		632
Calcutta,	1 t. 15 c.		16
Rangoon,	1 t.		6
Iron Oxide—			
Gijon,	1 t. 14 c.		610
Lime—			
Antigua,	2 t. 8 c. 2 q.		610
Magnesia—			
New York,	12 c.		615
Magnesium Sulphate—			
Fremantle	3 t. 8 c.		616
Manure—			
Demerara,	10 t.		686
Rouen,	24	16 c. 1 q.	81
Teneriffe,	10 12		107
Las Palmas,	8		708
Muriatic Acid—			
Pernambuco,	1 t. 1 c.		612
Oxalic Acid—			
Malta,	7 c.		612
Paint—			
Algoa Bay,			2 cks.
Amsterdam,	5 bgs. 7 dms		
Antwerp,	10 kgs. 88		
Benqueilla,	40	1 cs.	
Beyrout,		9 dms.	
Colon,			4
E. London,			15 pks
Eten,			9 cks
Galatz,	450		

Gibraltar,	49	16	8
Hamburg,		8	
Hong Kong,		80	
Maracaibo,			110 pks.
M. Video,			2 cks.
N. Orleans,		12 cs.	
New York,	80		8 pks.
Pt. Said,		47 dms.	
Rotterdam,	12		2 cks.
St. John's N.B.,		56	
St. Thomas,			17
Sierra Leone,	24		
Smayna,	400		
Valparaiso,	90		
Yokohama,	200		
San Sebastian,		10	

Painters Colours—

Akassa,		44 kgs.	
Amsterdam,	1 ck.	50 bgs.	
Bahia,	8 pks.		
Baltimore,	277		10 kns. 2 brls.
Beyout,			
Bilbao,			568 kgs. 19 cs.
Bombay,			120 bgs.
Boston,			
B. Ayres,	3		20
Calcutta,			
Callao,	274 pks.		
Hamburg,	30		
Havana,	3		
Hong Kong,	173		340 kgs.
Karachi,			
La Guayra,	55		
Las Palmas,	64		
Lisbon,	12		
Manaos,	4 cks.		
Mollendo,	255 pks.		
New York,		3 dms.	383 brls.
Oporto,	54 cks.		
Payta,		62 kgs.	
Ponce,	5 pks.	6	4
Prevesa,	175 pks.		
St. Nazaire,		100	2
Salaverry,		181	
Salonica,			1 ck.
Syra,			2
Vera Cruz,		100	
Yokohama,		280	

Paraffin Wax—

Genoa,	110 bgs.		
Leghorn,	125		1 ck.
Messina,	98		
Naples,	90		
Odessa,		15 cs.	
Palemo,	5		
Rio de Janeiro,	5		
Rouen,	25		
Savanna,	10		
Syra,	5		
Venice,	10		

Picric Acid—

Genoa,	3 c.	£14	
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Phosphorus—

Vera Cruz,		3 q.	£6
Hiogo,	10 c.		130
Hong Kong,	5		95
Shanghai,	7		70
Yoko,	2 t.	10	650

Potash Salts—

Tampico,	6 t.	2 c.	£446
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Potassium Bichromate—

Varna,	5 c.		£7
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Smayna,	5 t.	0	2 q. 194
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Potassium Carbonate—

Yokohama,	1 t.		£50
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Potassium Chlorate—

Santos,	16 c.		14
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Hiogo,	5 t.		£150
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Shanghai,	2	10 c.	75
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Tampico,	2	10	88
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Sydney,	5		152
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New York,	10		29
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Gothenburg,	1		31
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Funchal,		6	9
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Lisbon,	6		190
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Hong Kong,	6	10	201
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Potassium Cyanide—

New York,	3 t.	19 c.	£400
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Potassium Prussiate—

Constantinople,	8 c.		£23
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Salt—

Adelaide,	20 t.		
Algoa Bay,	40		
Antwerp,	315		
Baltimore,	565		
Benin,	6	5 c.	
Boston,	200		
Brisbane,	100		
B. Ayres,	80		
Calcutta,	1,020		
Christiania,	117	10	
Conakry,	31	17	

Copenhagen,	100		
Demerara,	127		
E. London,	81	8	
Egwanga,	20		
Galveston,	350		
Ghent,	105		
Halifax,	150		
Manaos,	17	17	
N. Orleans,	1,500		
New York,	115	100 cs.	
Old Calabar,	82		
Opobo,	20		
Pt. Natal,	100		
Rio de Janeiro,		250	
Rotterdam,	166		
St. John's N.B.,	460	5	
Sapeli,	71	10	
Stockholm,	118	9	
Trinidad,	16	3	
Valparaiso,	200		

Salt Cake—

Delagoa Bay,	9 t.	5 c.	£23
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Antwerp,	150		194
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Saltpetre—

New York,	1 t.		£21
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Macao,	2	9 c.	51
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Sa lile—

Passages,	10 t.	6 c.	£50
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Sheep Dip—

Rio Gallegros,	300 cs.		£375
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Santa Cruz,	200		250
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Natal,	220 dms.		60
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B. Ayres,	7	7 c.	3 q. 235
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Punta Arenas,	4		100
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Pt. Natal,	6		120
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Soap—

Accra,	25 bxs.		
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Akassa,	50		
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Algoa Bay,	2,810	50 cs.	
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Antwerp,		1,800	
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Arcus,	175		
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Axim,	100		
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Bakana,	99		
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Baltimore,		2	
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Barbadoes,	1,000		
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Belize,	400		
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Bombay,	160	109	
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Calcutta,	25		30 bdls.
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Callao,	6		
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C. C. Castle,	610		
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Cartagena,		1	
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Cape Town,	1,200	20	
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Cartagena, N.G.,		2	
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Christiania,	10	100	
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Constantinople,	200		25 kgs.
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Curacao,	57		
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Delagoa Bay,	50	30	1,094 pks.
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Emerara,	2,719		
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Dixcove,	100		
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E. London,	10	65	
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Genoa,			
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Gibraltar,	49		
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Guayaquil,	200		
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Half Jack,	35		
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Hamburg,	470		50
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			125 bdls.
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Havre,		275	
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Hong Kong,			50 dms.
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Karachi,	30	33	
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Kingston,	1,407		
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Lagos,	155		
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Larnaca,		12	
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Las Palmas,	204		
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Madras,	53		
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Malta,	71	26	
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Manaos,	1,120		
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Mauritius,	503		
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Melilla,	130	4	
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N. Orleans,	70		
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New York,	200	23	
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Patras,			9 pks.
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Penang,	200	45	10 cks.
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Pireus,	12		
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Pt. Elizabeth,	800	28	200 dms.
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Pt. Natal,	570		
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Pt. Said,	20		
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Rangoon,	16		
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Rotterdam,		150	
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St. John's N'd.,	695	10	
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St. Thomas,	35		
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Salt Pond,	100		
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Sandy Point,		100	
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San Juan,	50		
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Sapeli,	350		
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Shanghai,	1,000	1	4 cks.
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Singapore,	1,000		
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Smayna,	30		
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Stockholm,	150	4,193	
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Taragona,	100		
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Teneriffe,	274		
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Trinidad,	1,000		
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Valparaiso,	1,000		
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Warri,	350		
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Yokohama,	3		
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Soda Alkali—

Catania,	69 brls.		
E. London,		7 cks.	
Genoa,	35		
Leghorn,	20		
Lisbon,		96	
Melbourne,	16 pks.		
Oporto,	28	38	
Para,	30		

Soda Ash—

Adelaide,		121 brls.	
		69 cks.	
Amsterdam,	1,331 bgs.		
Ancona,		2	
Antwerp,	920	17	
Bahia,		26	
Beyrout,		25	
Boston,	560	71	
B. Ayres,	100		
Calcutta,		125	
Cape Town,	100 kgs.		
Christiania,	100 bgs.		
Civita Vecchia,	25 tcs.		
Corfu,	30 brls.		
Drammen,		24	
Ghent,	800		
Gotenbourg,		10	
Hamburg,		42	
Jaffa,	25		
M. Video,		130	
N. Orleans,	39 tcs.		
New York,	1,850	105	9
Oporto,		10	
Philadelphia,	320	29	
Pireus,		20 brls.	
Rio de Janeiro,		50	40
Portland,	320		
St. John's N.B.,	300		
Salonica,		15	
Sourabaya,		40	
Sydney,		167	
Venice,	284	28	

Soda Crystals—

Antofagasta,	20 kgs.		
Bombay,	175		
Boston,		140 cks.	
B. Ayres,	100	100 brls.	
Calcutta,		30	
Corfu,		20	
M. Video,		50	
New York,	420	140	10
Para,			
Pt. Natal,	370 bxs.		
St. John's N'd.,	40		

Sodium Bicarbonate—

Sodium Bicarbonate—			
Adelaide,	{	25 bgs.	
		107 kgs.	5 cks.
Amsterdam,		100	
Antwerp,		10	
Baltimore,		14	16
Bomb-y,		212	
Calcutta,		575	
Cape Town,		50	
E. London,		100	
Genoa,		46	
Hamburg,		33	
Libau,		158	
M. Video,		8	
Naples,		51	
New York,		40	
Palermo,		33	
Pt. Natal,		50 bgs.	
Rangoon,	{	15	
		106 kgs.	
Rouen,		148	
Sdney,		360	18

HULL.

Week ending December 11th.

Alkali—	
Bergen,	15 cks.
Ammonium Sulphate—	
Antwerp,	500 bgs.
Bremen,	1,250
Ghent,	250
Hamburg,	1,556
Antimony—	
Boston,	15 cks.
Barium Carbonate—	
Stettin,	204 c.
Bleaching Powder—	
Danzig,	33 cks.
Carbolic Acid—	
Amsterdam,	93 cks.
Rotterdam,	20
Caustic Soda—	
Helsingfors,	100 dms.
Riga,	215
Chemicals (otherwise undescribed)	
Amsterdam,	302 cks.
Bordeaux,	30 cks.
Copenhagen,	20
Christiania,	12 913 slbs.
Danzig,	9 5 pks.
Genoa,	21
Gothenburg,	23 10
Helsingfors,	15
Hamburg,	196
New York,	50
Norroping,	20 kgs.
Rotterdam,	4 80 100
Riga,	100 pks.
Stettin,	6
Stockholm,	2 30 kgs.
Coal Products (otherwise undescribed)	
Marseilles,	75 cks.
Cobalt Oxide—	
Antwerp,	2 cs.
Cottonseed Oil—	
Antwerp,	752 c.
Amsterdam,	2,582
Bremen,	204
Copenhagen,	104
Christiania,	18
Dunkirk,	221
Hamburg,	1,170
Konigsberg,	59
Marseilles,	5,360
Rotterdam,	575
Stettin,	814
Creosote—	
Antwerp,	30 dms.
Dyestuffs (otherwise undescribed)	
Genoa,	6 dms.
Hamburg,	1 ck.
Riga,	262 pks.
Stettin,	60 bgs.
Glue—	
Gothenburg,	10 bgs.
Hamburg,	2 cs.
Guano—	
Dunkirk,	23 t.
Linseed Oil—	
Antwerp,	75 c.
Amsterdam,	203
Alesund,	17
Bergen,	24
Christiania,	281
Drontheim,	18
Genoa,	60
Hamburg,	234
Painters' Colours—	
Antwerp,	97 cks. 9 cs. 5 dms.
Amsterdam,	6 3
Boston,	58 25 kgs.
Copenhagen,	3 10 dms.
Christiania,	1 1 48
Christiansand,	66 pks.
Drontheim,	11
Danzig,	1
Dunkirk,	3
Genoa,	22
Gothenburg,	1
Hamburg,	31
Harlingen,	2
Naples,	9
New York,	80
Rotterdam,	1
Riga,	2
Stettin,	18
Pitch—	
Antwerp,	247 t.
Dunkirk,	240
Leghorn,	100
Soap—	
Christiania,	2 cs.
Gothenburg,	1

Soda—	
Christiania,	1 ck.
Tallow—	
Gothenburg,	10 cks.
Tar—	
Antwerp,	5 cks.
Bremen,	3
Dunkirk,	23
Konigsberg,	5
Rotterdam,	17
Treacle—	
Drontheim,	50 cks.
Varnish—	
Bremen,	1 cs.
Drontheim,	1
Danzig,	1 ck. 4
Ghent,	2
Gothenburg,	2 1
Hamburg,	1
Norroping,	4

GLASGOW.

Week ending December 16th.

Ammonium Sulphate—	
Mauritius,	50 t. 19 c.
Rotterdam,	50 13
Barbadoes,	25 9 1/4
Demerara,	516 3 1/4
Hamburg,	151 10
Baltimore,	348 15 1/4
Bleaching Powder—	
Calcutta,	45 t.
Borax—	
Hamburg,	1 t. 6 c.
Rotterdam,	1
Gosselies,	£45
Chloroform—	
Freemantle,	£23
Coal Products—	
Aniline	
U.S.A.,	£120
Rotterdam,	£58 105.
Aniline Dyes	
Calcutta,	£30
Benzol	
Hamburg,	43 t. 3 c.
Creosote Oil	
France	£1,855
Christiania,	30
Pitch	
Madras,	£25
Spain,	150
Amsterdam,	300 t.
Danzig,	100 11 c.
Italy,	55
Tar	
Calcutta,	£91
Madras,	£38 15 s.
U.S.A.,	£43
Hamburg,	11 t. 15 c.
Coal Products (otherwise undescribed)	
Rotterdam,	£100
Cutch—	
Amsterdam,	£70
Dyestuffs (otherwise undescribed)	
Rotterdam,	£94
Farina—	
Oporto,	5 t.
Gibraltar,	1 3 1/4 c.
Hydrochloric Acid—	
Trinidad,	£30 17 s.
Iodine—	
Rotterdam,	£2,050
Linseed Oil—	
Colombo,	1 t. 16 c.
Gibraltar,	1 1/4
Boda,	3 1/4
Manganese—	
Rotterdam,	£120
Manure—	
Demerara,	40 t.
Paint—	
Colombo,	£22 11 s.
Coronel,	£80
Gibraltar,	30
Junin,	£26 11 s.
Calcutta,	£673
Mauritius,	33
M. Video,	76
Perth, W.A.,	48
Painters' Colours—	
Gibraltar,	qty.
Oporto,	£115
Rotterdam,	95
B. Ayres,	384
Shanghai,	"
Singapore,	"

Paraffin Wax—	
Christiania,	£2
Cape Town,	£27 10 s.
Rotterdam,	£25
Paris,	360
Singapore,	23
Riga,	200
Phosphates—	
Trinidad,	2 t. 13 1/4 c.
Phosphoric Acid—	
Trinidad,	£20
Potassium Bichromate—	
Antwerp,	£322
Hioo,	98
Rouen,	232
U.S.A.,	758
Yokohama,	373
Potassium Cyanide—	
Singapore,	£96
Sheep Dip—	
Punta Arenas,	£125
B. Ayres,	207
Soap—	
E. London,	2 t. 10 c.
Shanghai,	3 4 1/4
Singapore,	1 16 1/4
Sodium Bichromate—	
Gothenburg,	15 1/2 c.
Antwerp,	1 t. 17
Italy,	3 7 1/2
Rouen,	15 2 1/4
U.S.A.,	3 3 1/4
Starch—	
Rotterdam,	10 c.
Stannous Chloride—	
Trinidad,	£26 15 s.
Sulphur—	
Trinidad,	6 t. 18 1/2 c.
Sulphuric Acid—	
Calcutta,	£30
Treacle—	
Bergen,	30 t. 10 c.
Christiania,	28 18
Varnish—	
Paris,	£45
White Lead—	
Calcutta,	£138
Cape Town,	31
Zinc Ashes—	
Rotterdam,	£140

TYNE.

Week ending December 11th.

Alkali—	
Christiania,	1 t. 13 c.
Rotterdam,	7 13
Riga,	10 11
Alum—	
Seville,	5 t. 10 c.
Ammonium Carbonate—	
Barcelona,	16 c.
Hamburg,	2 t. 9
Bergen,	15
Ammonium Sulphate—	
Hamburg,	20 t.
Antimony—	
Barcelona,	1 t. 12 c.
Ergasteria,	3
Hamburg,	11
Rotterdam,	2
Arsenic—	
Barcelona,	3 t. 1 c.
Odense,	1
Barium Bin oxide—	
Rouen,	25 t. 1 c.
Bleaching Powder—	
Christiansand,	15 t. 1 c.
Bergen,	5 1
Antwerp,	10
Copenhagen,	7 16
Christiania,	16 8
Rotterdam,	21
Trondheim,	15 3
Helsingfors,	94 4
Abo,	12 5
Borax—	
Ergasteria,	3 c.
Caustic Soda—	
Stavanger,	1 t. 9 c.
Antwerp,	7 2
Copenhagen,	8 10
Seville,	31 17
Christiania,	13 12
Hamburg,	69 12
Odense,	1 3
Helsingfors,	94 2

GOOLE.

Week ending December 8th.

Benzol—	
Boulogne,	36 cks.
Rotterdam,	74
Coal Products (otherwise undescribed)	
Antwerp,	2 cks.
Boulogne,	27 7 cs.
Ghent,	2
Hamburg,	14
Rotterdam,	366 1
Colours—	
Antwerp,	1 ck.
Ghent,	6
Dyestuffs (otherwise undescribed)	
Hamburg,	20 cks.
Manure—	
Dunkirk,	595 bgs.
Pitch—	
Antwerp,	813 t.
Soap—	
Boulogne,	2 cs.
GRIMSBY.	
Week ending December 11th.	
Alkali—	
Port au Prince,	152 dms.
Chemicals (otherwise undescribed)	
Rotterdam,	46 dms.
Dieppe,	2 cks. 1 pk.
Coal Products (otherwise undescribed)	
Dieppe,	30 cks. 1 kg.
Colours—	
Antwerp,	21 cks. 1 cs. 3 pks.
Hamburg,	1 bx.
Malmö,	1
Port au Prince,	2 cks. 4 brls.
Rotterdam,	6 1 cs. 10
Manure—	
Hamburg,	60 bgs.

PRICES CURRENT.

WEDNESDAY, DEC. 22ND, 1900

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—

	£	s.	d.
Acetic, 25 % and 40 %	per cwt.	5/9	& 8/9
" Glacial	"	39	0
Arsenic S.G., 2000°	"	1	4 0
Fluoric	per lb.	0	0 3 1/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0 10
" (Cylinder), 30° Tw.	"	0	3 0
Nitric 80° Tw.	per lb.	0	0 1 1/4
Nitrous	"	0	0 1 1/4
Oxalic	nett	0	0 3 1/2
Phosphoric, 1750°	"	0	0 11 1/2
Picric	"	0	0 11
Sulphuric (fuming 50 %)	per ton	15	10 0
" (monohydrate)	"	5	10 0
" (Pyrites, 168°)	"	3	0 0
" " 150°	"	1	5 0
" (free from arsenic, 145°)	"	1	7 6
Sulphurous (solution) S.G. 1025	"	3	0 0
Tannic (pure)	per lb.	0	1 2 1/2
Tartaric	"	0	1 1 1/2
Arsenic, white powdered	nett	per ton	21 7 6
Alum (loose lump)	"	4	10 0
Alumina Sulphate (pure)	"	4	2 6
Aluminoferic	"	2	3 6
Aluminium (Ingot metal 98/99 1/4 %	nett	148	0 0
Ammonia, Anhydrous	per lb.	0	1 3
" 880=28° B.	"	0	0 2 1/4
" =24° B.	"	0	0 1 3/4
" Carbonate	nett	0	0 3
" Muriate	per ton	18	0 0
" (sal-ammoniac) 1st & 2nd	per cwt.	33	& 31/-
" Nitrate	per ton	31	0 0
" Phosphate	per lb.	0	0 3 1/4
" Sulphate (grey) London	per ton	9	0 0
" (grey) Hull	"	9	1 3
Aniline Oil (pure)	per lb.	0	0 7 1/4
Aniline Salt	"	0	0 6 1/2
Antimony	per ton	30	5 0
" (tartar emetic)	per lb.	0	0 8
" (golden sulphide)	"	0	0 10
Barium Chloride	per ton	6	15 0
" Carbonate (native)	"	3	10 0
" Sulphate (native levigated)	"	42/6 to 65/-	
Bleaching Powder, 35 %	nett	6	2 6
" Liquor, 7 %	"	3	10 0
Bisulphide of Carbon	"	12	0 0
Chromium Acetate (crystal)	per lb.	0	0 6
Calcium Chloride	per ton	2	5 0
China Clay (at Runcorn) in bulk	"	15/- to 25/-	

Coal Tar Products and Dyes:—

Alizarine (artificial) 20 %	.. .. .	nett	per lb.	0	0	6 3/4
Magenta	.. .. .	"	"	0	3	6
Anthracene, 30 % A, f.o.b. London	.. .. .	per unit	per cwt.	0	0	6
Benzol, 90's	.. .. .	per gallon	"	1	7	
" 50/90	.. .. .	"	"	0	1	8 1/2
Carbolic Acid (crude 60°)	.. .. .	per gallon	"	2	0	
" (crystallised 40°)	.. .. .	per lb.	"	0	0	7 1/4
" (liquid 95/97%)	.. .. .	per gallon	"	0	1	0
Creosote (ordinary)	.. .. .	"	"	0	0	2 1/2
" (filtered for Lucigen light)	.. .. .	"	"	0	0	3
Crude Naphtha 30 % @ 120° C.	.. .. .	"	"	0	0	9 1/2
Grease Oils, 22° Tw.	.. .. .	per ton	"	2	15	0
Pitch, f.o.b. Liverpool or Garston	.. .. .	"	"	1	0	0
Solvent Naphtha, 90 % at 160°	.. .. .	per gallon	"	0	1	8
Copper	.. .. .	per ton	"	48	2	6
" Sulphate	.. .. .	"	"	16	5	0
" Oxide (copper scales)	.. .. .	"	"	44	10	0
Glycerine (crude)	.. .. .	"	"	22	10	0
" (distilled S.G. 1250°)	.. .. .	"	"	37	10	0
Iodine	.. .. .	nett, per oz.	"	0	0	7 1/2
Iron Sulphate (copperas)	.. .. .	per ton	"	1	10	0
" Sulphide (antimony slag)	.. .. .	"	"	0	0	0
Lead (sheet)	.. .. .	"	"	13	15	0
" Litharge Flake (ex ship)	.. .. .	"	"	16	0	0
" Acetate (white)	.. .. .	"	"	23	0	0
" brown	.. .. .	"	"	17	0	0
" Carbonat (white lead) pure	.. .. .	"	"	17	0	0
" Nitrate	.. .. .	"	"	20	0	0

Lime, Acetate (brown) (ex ship)	per ton	6	0 0
" (grey) (ex ship)	"	8	0 0
Magnesium (ribbon and wire)	per oz.	0	2 3
" Chloride (ex ship)	per ton	7	10 0
" Carbonate	per cwt.	1	17 0
" Calcined Magnesia	per ton	8	0 0
" Sulphate (Epsom Salts)	per ton	2	15 0
Manganese, Sulphate	"	16	0 0
" Borate	per cwt.	2	10 0
" Ore, 70 %	per ton	3	10 0
Methylated Spirit, 61° O.P.	per gallon	0	1 8
Naphtha (Wood), Solvent	"	0	2 9
" " Miscible, 60° O.P.	"	0	3 8

Oils:—			
Cotton-seed	per ton	15	5
Linseed	"	16	0
Stearine	per ton	22	0
Phosphorus (yellow)	per lb.	0	2
" (red)	"	0	2
Potassium (metal)	per oz.	0	3
" Bichromate	nett	per lb.	0 0
" Carbonate, 90% (ex ship)	per ton	16	10 0
" Chlorate	per lb.	0	0
" Cyanide, 98%	"	0	1
" Hydrate (Caustic Potash) 90 %	per ton	23	10 0
" (Caustic Potash) 75/80 %	"	19	15
" Potash Hydrate Liquid 30 %	"	11	5
" Nitrate (renned)	per cwt.	1	1
" Permanganate	per cwt.	3	15
" Prussiate Yellow	per lb.	0	0
" Sulphate, 90 % (ex ship)	per ton	9	15
" Muriate, 80 % (do.)	"	8	10
Silver (metal)	per oz.	0	2
Sodium (metal)	per lb.	0	2
" Carb. (refined Soda-ash) 48 %	nett	per ton	4 15
" (Caustic Soda-ash) 48 %	"	4	5
" (Carb. Soda-ash) 48 %	"	4	0
" (Alkali) 58 %	"	3	17
" (Soda Crystals)	"	2	5
" Acetate (ex-ship)	"	11	0
" Arseniate, 45 %	"	14	7 6
" Chlorate	per lb.	0	0 4
" Borate (Borax)	net, per ton	13	5 0
" Bichromate	per lb.	0	0 3
" Hydrate (77 % Caustic Soda)(f.o.b.) net pr. ton	"	8	10 0
" (74 % Caustic Soda)	"	8	2 6
" (70 % Caustic Soda)	"	7	5 0
" (60 % Caustic Soda)	"	6	5 0
" (pure liquor 90° Tw.)	"	3	12 6
" 77/78 % powdered (99 % hydrate)	"	12	10 0
" Bicarbonate	"	6	10 0
" Hyposulphite	"	5	5 0
" Manganate, 25%	"	15	0 0
" Nitrate (95 %) ex-ship Liverpool	per cwt.	0	7 1/2
" Nitrite, 98 %	per ton	26	10 0
" Phosphate	"	9	10 0
" Silicate (glass)	per ton	4	10 0
" (liquid, 100° Tw.)	"	3	7 6
" Stannate, 40 %	per cwt.	3	2 9
" Sulphate (Salt-cake)	per ton	0	19 0
" (Glauber's Salts)	"	1	7 6
" Sulphide	"	6	15 0
" Sulphite	"	5	0 0
Strontium Hydrate, 100%	"	10	15 0
Sulphocyanide Ammonium, 95 %	per lb.	0	0 5 1/4
" Barium, 95 %	"	0	0 4
" Potassium	"	0	0 6 1/4
Sulphur (Flowers)	per ton	7	10 0
" (Roll Brimstone)	"	6	5 0
" Brimstone: Best Quality	"	4	10 0
Superphosphate of Lime (26%)	"	2	5 0
Tallow (Beef)	"	18	10 0
Tin Crystals	per lb.	0	0 4 1/4
Zinc (Spelter)	per ton	65	0 0
" Chloride (solution, 100° Tw.)	"	5	15 0
" Sulphate, Crystal	"	5	15 0

INDEX.

VOL. XXI.

A		Page	B		Page	C		Page
Absorbed Oxygen Test ..	370, 389		Extinguishing Fire ..	402		Soda and Aluminium Double		
Abstracts of Patents ..			Extracts, Drying ..	99		Chloride ..	131	
Acetates, Producing ..	19		Ferro-Sodium Fluxes ..	211		Soldering Aluminium ..	378	
Acid Denitrating ..	163		Fertilisers ..	243, 399, 115, 103		Spent Lyes, Purifying ..	1	
Acid Proof Tank ..	67		Filters for Sewage ..	274, 323		Sugar from Molasses ..	35	
Acid resisting Cements, etc. ..	231		Piredamp, Detecting ..	371		Sulphate Glass ..	103	
Acids, Concentrating ..	339		Fire, Extinguishing ..	402		Sulphate of Lead for White Lead ..	103	
Acids, etc., Condensing ..	90		Fluxes, Ferro-Sodium ..	271		Sulphide Ores, Smelting ..	84	
Acids, Mixing, for Nitration ..	275		Furnace Draft Indicators ..	195		Sulphur Ores, Treating ..	275	
Administering Oxygen ..	83		Garbage Furnace ..	323		Tank for Chemical Purposes ..	67	
Ageing Whisky, etc. ..	355, 387		Gas Liquor, Removing CO ₂ and H ₂ S from ..	16		Tartaric Acid and Tartrates ..	179	
Air, Oxygen From ..	227		Gases, Destroying Noxious ..	17		Treating Bad Air in Mines ..	3	
Albuminised Materials, Blood, etc., ..			Glass (Sulphate) ..	65		Tin Oxide (Powder) Smelting ..	131	
Treating ..	131		Glue, Waterproof ..	35		Varnish, Manufacture of ..	307	
Alcoholic Liquors, Ageing ..	355, 387		Grinding Cement Materials ..	275		Vitriol, Concentrating ..	243, 291	
Alloys of Magnesium ..	307		Gutta Percha, Extracting ..	99, 227		Water Gas, Removing Iron Com-		
Aluminium, Purifying ..	307		Hydrogen and CO ₂ Gases ..	51, 147		ponents from ..	35	
Aluminium, Reducing ..	19		Hypochlorite Compounds ..	211		Waterproof Glue ..	51	
Aluminium and Soda Manufacture ..			Iron Compounds from Water Gas ..	35		White Lead, Manufacture of ..	163, 291	
of Double Chloride ..	131		Iron Oxide and Nickel Extraction ..	243		Zinc Chloride, Obtaining ..	371	
Aluminium, Soldering ..	371		Iron Oxide, Pigment ..	243		Zinc and Copper Ores, Treating ..	259	
Ammonia, Distilling ..	387		Lead and Copper Acetates ..	19		Zinc Electrolysis of Solutions ..	195	
Ammonia from Garbage ..	323		Lead Ores, Smelting ..	83, 131		Zinc Ores, Treating ..	3, 51, 67	
Ammonium Bichromate ..	115		Lead Oxide, Manufacture of ..	83		Zinc Pigments ..	3	
Animal Charcoal, Revivifying ..	215		Lead Pigments ..	201		Zinc White, Manufacture of ..	179	
Apparatus for Ammonia Manu- ..			Leather Substitute ..	211, 259		Accident at a Gas Works ..	243	
facture ..	387		Linoleum Drying ..	67		Acetylene and Calcium Carbide ..	309	
Apparatus, Electrolytic ..	83, 131, 339		Liquids, Concentrating ..	99		Acetylene ..	232	
Arsenic, Separating, from Copper ..	163		Magnesium Alloys ..	359		" The Danger Limit ..	280	
Barium, Carbonate Manufacture ..	387		Matches, Manufacture of ..	267		" Illumination ..	260	
Barytes Carbonate of ..	387		Mines, Bad Air in ..	33		" Plant, The Ideal ..	216	
Bay Salt, Purifying ..	51		Mines, Fire Damp in ..	323		" for Power ..	216	
Bichromate of Ammonia ..	215		Molasses, Sugar from ..	35		" Regulations in Switzerland ..	56	
Bleaching Compounds ..	211, 243		Myrabolan Extracts ..	51		Address, Changes of ..	3, 214, 361, 392	
Bleaching Liqueur, Manufacture of ..	163		Nickel Extraction ..	243		Adulteration of Milk ..	24	
Bleaching Powder, Preserving ..	115		Nitric Acid, Manufacture of ..	275, 339		Affairs of the Rhymney Iron Co. ..	239	
Boiler Disincrustant ..	115		Nitric Peroxide into Nitric Acid ..	275		Ageing Whisky ..	230	
Bone Black, Revivifying ..	215		Nitro Glycerine, Manufacture of ..	275		Agricultural Education in France ..	294	
Brine, Salt from ..	211		Nitrous Acid, &c., Condensing ..	99		Airdrie, The Explosion at ..	168	
Calcium Carbide Manufacture ..	163, 179, ..		Noxious Gases, Destroying ..	67		Algerian Phosphates ..	56, 120, 213	
323.			Oil, Decolorising Palm ..	402		Alkali and Bleach Exports ..	54, 104, 79	
Calcium Carbide from Peat ..	227		Oil, Deodorising ..	3			246, 338	
Carbide of Calcium, Manufacture of ..	163, ..		Oil from Peat ..	19		" Co., The Michigan, Progress of ..	311	
179, 323.			Oxalic Acid, Manufacture of ..	19		" Manufacture in America ..	343	
Carbonates of Alkalies, Caustic ..			Oxygen from the Air ..	227		" Waste, Troublesome ..	243	
from ..	371, 402		Oxygen, Applying ..	83		" Price of Ammonia ..	290	
Carbon Dioxide and Hydrogen Gases ..	51, ..		Paint, Fire, &c., Resisting ..	373		" Trade Developments ..	258	
147.			Paints, Improved ..	403		Aluminium Co., Ltd. ..	150	
Carbon Dioxide, Purifying ..	195		Palm Oil, Decolorising ..	402		" Production of ..	152	
Carbon Dioxide and H ₂ S from ..			Paper, Substitute ..	211, 259		Amalgamation, The Nordenfelt ..		
Gas Liquor ..	19		Peat Charcoal, Producing ..	147, 195, 355		Vickers ..	216	
Carboys ..	243		Peat, Oil from ..	30		America, Alkali Manufacture in ..	341	
Caustic Alkali Manufacture ..	371, 402		Peat, Treating ..	227		" Iron and Coal Trades in ..	72	
Cement, Acid Resisting ..	131		Phosphorus, Manufacture of ..	131		" "Sunlight" Soap Works in ..	232	
Cement Plant ..	275		Pigment, Iron Oxide as ..	243		American Chemical Trade ..	405	
Chlorates, Manufacture of ..	103		Pigments, Improved ..	403		" Competition and the Iron ..		
Chlorine, Absorbing ..	103		Pigments, Lead ..	291		" Trade ..	166	
Chlorine, Gas Pumping ..	243		Pigments, Zinc ..	3		" Enterprise in China ..	391	
Chlorine and Zinc, Obtaining ..	371		Precious Metals, Recovering ..	35		" Paper Makers' Combine ..	213	
Chlorine, etc., from Zinc Ores ..	51		Preserving Bleaching Powder ..	115		" Patent Law Reform ..	226, 312	
Coke Ovens ..	387		Presses for Sewage ..	51		" Trusts and Tariffs ..	34	
Concentrating Acid ..	243, 291		Preventing River Pollution ..	259		Ammonia Tar Market ..	8, 24, 40, 56, 72	
Concentrating Liquids ..	99		Producing Oxalic Acid ..	19		83, 105, 120, 136 ..	152, 168, 184, 209, 217	
Copper, De-arsenicating ..	103		Pumping Chlorine Gas ..	243		232, 248, 264, 280, 296 ..	312, 322, 344, 361	
Copper Sulphate Purifying ..	99, 115		Purifying Carbon Dioxide ..	195			376, 397, 406	
Copper and Zinc Ores, Treating ..	259		Purifying Spent Lyes ..	3		Ammonium Sulphate Scheme, The ..	71	
Cyanides from Blast Furnaces ..	371		Red Lead in Oil ..	261		Analyses of Infusorial Earth ..	279	
Cyanides, Drying ..	201		Reducing Aluminium ..	19		" Statement of ..	113	
Cyanides, Recovering ..	147		Resinous Soap ..	307		" of Limestone ..	102	
Denitrating Acid ..	163		River Pollution, Preventing ..	259		" of Phosphor Bronze ..	4	
Deodorising Oil ..	3		Salt (Bay) Purifying ..	57		" of Water ..	247	
Detergent ..	211		Salt, Manufacture of ..	211		Anglo-Sicilian Sulphur Co., Ltd. ..	212, 231	
Disincrustant for Boilers, etc. ..	115		Secondary Batteries ..	355		Answers to Correspondents ..	198, 227, 370	
Disintegrating Machinery ..	83		Sewage Filtering ..	373, 377		Anthrax and Wool Sorting ..	21	
Drying Cyanides ..	201		Sewage Filter Presses ..	51		Ardeer Explosion, The ..	70	
Drying Extracts ..	99		Sewage Sludge Treating ..	339		Arch Light and Eyesight ..	359	
Drying Linoleum ..	67		Sewage Tanks ..	115, 179		Arndt's Economiser ..	340	
Electrical Production of Peat Char- ..			Smelting, Tin Oxide Powder ..	35		Artificial Indigo ..	405	
coal ..	147, 195		Smoke Prevention ..	37		Association, The British ..	132	
Electrolysis, Improvements in ..	227		Soap, Manufacture of ..	131, 147, 211, ..		Audlem Water Supply, &c. ..	391	
Electrolysis of Zinc Solutions ..	205			227, 355, 402		Australia, Gypsum in ..	389	
Electrolytic Apparatus ..	83, 131, 339		Soap, Resinous ..	307		Australia and the Paper Trade ..	230	
Bacteriological Examination of Water ..	182							
197								
Bad Oil and Cheap Lamps ..	180							
Barium Works in U.S.A. ..	216							
Barrels, Caird's Stamped Steel ..	248							
Barrow Salt Co. ..	215							
Battersea, Technical Day Classes at ..	392							
Bavarian Glass Trade, Decline of ..	197							
Beetroot Crop, The Foreign ..	391							
Beetroot Cultivation ..	341							
Beet Sugar in the U.S.A. ..	3							
Beginning of the End ..	9							
Bengal, Dyes in ..	67							
Penzance Fatality ..	216							
Between Two Stools ..	1							
Be Wise in Time ..	321							
Birmingham Water Supply ..	178							
Bleach Works, Fatality at ..	373							
Board of Trade and Commercial ..								
Intelligence ..	164							
Bogus American Degrees ..	99							
Bohemian Glass Industry ..	68							
Boiler Explosion ..	3							
Boilers and Engines, Care of ..	199							
Book Shelf, Our—								
Analysts' Laboratory Companion.								
A. E. Johnson ..	300							
Alkali Works, 33rd Report on ..	246							
Catalogues ..	200, 310							
Commercial Uses of Coal Gas.								
T. Fletcher ..	310							
Course of Practical Chemistry.								
Part I. M. M. P. Muir ..	310							
Handy Book for Brewers. H. E. ..								
Wright ..	310							
Introduction to the Study of ..								
Chemistry. W. H. Perkin, jun., ..								
and B. Lean ..	54							
Junior Course of Practical ..								
Chemistry (new edition). F. Jones ..	54							
Mineral Oils and their By-products.								
I. I. Redwood ..	54							
Organic Chemical Manipulation.								
J. F. Hewitt ..	310							
Pamphlets ..	200, 310							
Borax Works at Brooklyn ..	295							
Bounties on Sugar ..	405							
Bowman, Thompson & Co., Ltd. ..	85							
Bradford Tar Explosion ..	2, 66							
Brazil, Manganese in ..	211							
Brent, The River ..	85							
British Aluminium Co., Ltd. ..	56, 87							
British Association, The ..	132							
British Columbia, Oil, etc., in ..	211							
British Steel Industry ..	261							
British Trade Abroad ..	49							
British Trade in Russia ..	129, 135							
Bronze Phosphor, Analysis of ..	4							
Brunner, Mond & Co ..	274							
						</		

	Page		Page		Page
Chamber Space in Vitriol Manufacture ..	373	Development in the Alkali Trade ..	255	Germany and the U.S.A. Oil Monopoly ..	391
Change of Address:—3, 214, 392, 361 ..	404	Diamond Cut Diamond ..	117	Gerona Copper Co., Ltd. ..	390
Charcoal, U.S.A. Duty on ..	104	Dingley Tariff and Germany ..	394	Glasgow Imports:—12, 28, 44, 60, 76, 92, 108, 125, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 299, 316, 332, 349, 364, 379, 395, 410 ..	349
Chemical Works, Fatality at ..	247	Dividends .. 59, 244, 274, 292, 295, 316, 355 ..	241	Glasgow Sewage Scheme ..	166
Chemical Industry, Notes on ..	114, 343	Doubtful El Dorado ..	241	Glasgow Sewage Works ..	309
American ..	114, 343	Dust Carts Steam ..	263	Glass Industry in Bohemia ..	68
Chemical Manufacturers and "Special Rules" ..	349, 374	Duty on Charcoal, The U.S.A. ..	104	Glass Trade, Decline of Bavarian ..	197
Chemical Trade, Short Time in ..	136	Dyers' and Colorists' Society ..	386	Glass Works, Fire at ..	376
Chemical Trade, Depression in ..	375	Dyes and Dyeing in Bengal ..	67	Glucose Trust, The ..	167
Chemical Trade, Failure in ..	120	Dynamite in the Transvaal .. 65, 279, 301, 329 ..	301	Gold, Action of Cyanide on ..	327
Chemical Trade and Foreign Competition ..	244			Gold Extraction and Bromine ..	261
Chemical Trade, The Tyne ..	199			Recovery Co., Ltd. ..	261
Chemical Trade, Collapse of ..	24, 216			Gold Production:—34, 114, 181, 214, 242, 307, 309 ..	369
Chemistry, The Teaching of ..	21			Goole Exports:—15, 31, 47, 63, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 413 ..	351
Cheques, Crossed ..	69			Goole Imports:—12, 28, 44, 60, 76, 92, 108, 125, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 395, 410 ..	349
Cheshire, Decline of Salt Shipments ..	216			Grimsby Exports:—15, 31, 47, 63, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 413 ..	349
Cheshire, River Pollution in ..	275			Grimsby Imports:—12, 28, 44, 60, 76, 92, 108, 125, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 395, 410 ..	349
Cheshire, Technical Education in ..	168			Guano Deposits, The Utah ..	7
Chili and the Nitrate Industry ..	118, 268			Gunpowder Monopoly in Spain ..	8
Chili, Nitrate Depression in ..	209			Gypsum in Australia ..	389
Chilian Scheme, A Bold ..	324			Gypsum, Kansas ..	279
China, Minerals in ..	391				
China, U.S.A. Enterprise in ..	391				
Chlorate Miller, Accident to ..	136				
Chloroform, Death under ..	392				
Cleveland Iron Trade ..	355				
Cleveland Salt Co., Ltd. ..	51				
Clippens Oil Co.'s Deadlock ..	392				
Coal Combine, The Lancashire ..	149				
Coalfield, The Kentish ..	311				
Coalfields of Japan ..	167				
Coal Gas and Water Gas ..	8, 136				
Coal Masters and Compensation ..	200				
Coal in the Midlands ..	33				
Coal Trade, The Welsh ..	181				
Coke Ovens ..	295, 326				
Colorado Nitrate Co., Ltd. ..	24, 216				
Collapse of a Chemical Works ..	24, 216				
Combination of Manchester and Salford Sewage Schemes, Proposed ..	194				
Combine, The Explosives ..	152				
Commercial Intelligence and the Board of Trade ..	164				
Commerce and Science ..	388				
Company Promotion in extremis ..	243				
Companies' Reports: 22, 69, 87, 149, 212, 230, 244, 251, 295, 306, 326, 341, 355, 372, 390, 403 ..	372, 390, 403				
Compensation Bill and the Coal-masters ..	8, 136				
Concentration of Vitriol ..	278				
Confectionery, Paraffin Wax in ..	215				
Congress, The Sanitary ..	194				
Continental Technical Schools ..	210				
Copper Electrical ..	296				
Copper, Residues in Electrolytic Refineries ..	278				
Copper Shares, Hints on ..	404				
Corn, Industries of ..	276				
Correspondence:—					
A Disclaimer. T. G. Webb ..	67				
Re A Disclaimer. Ivan Levinstein ..	88				
Beetroot Growing. S. Stein ..	354				
Commercial Electrolysis. J. Hargraves ..	328				
Commercial Treaties and Ammonia Sulphate. E. Groschke ..	88				
Culvert Scheme and the Joint Committee. D. B. Hewitt ..	165				
Drying Seaweed. T. Gooding ..	180				
Engineers' Strike. G. Little ..	339				
Electrolytic Phosphorus. J. B. Readman ..	263				
Great City Fire. Merryweather and Sons, Ltd. ..	339				
Income Tax, Assessment. J. Affleck, Junr. ..	180				
Tar Still Explosions. R. Hamilton ..	87				
Tar Still Explosions. J. E. Riley ..	84				
Correspondents' Answers to: 193, 227, 370 ..	145				
Crisis in the Sewage Question ..	209				
Crisis, The Sodium Nitrate ..	209				
Crops, Manuring ..	392				
Crops of the Year ..	391				
Cultivation of Beets ..	342				
Culvert Scheme, The Manchester ..	166				
Cyanide Process, Patent ..	357				
Cyanide Process New Zealand ..	405				
Cyanide Works at Utah ..	292				
Cyanides Action on Gold ..	377				
D					
Dangerous Trades Committee ..	388				
Dangerous Trades and Inspection ..	326				
Dangers of Inebriety ..	161				
Dee, Pollution of ..	246				
Defence Committee, The Sewage ..	262				
Definition of Kaolin ..	262				
Degrees, Bogus American ..	99				
Depression in the Chemical Trade ..	375				
Derbyshire, Lead Mining ..	354				
Derwent, Pollution of ..	36				
Destructors, The "Otto" ..	84				
E					
East London Technical College ..	210				
Econometer, Arad's ..	349				
Econometer, Pimbley's ..	200				
Edison's Iron and Steel Process ..	306				
Education, Progress in Technical ..	114				
Electrical Copper ..	248				
Electrical Phosphorus ..	23				
Electrical Power Storage Co., Ltd. ..	216				
Electric Lamp ..	136				
Electric Motor Cabs ..	269				
Electric Plant, Polyphase ..	341				
Electro Chemical Co., Ltd. ..	6				
Electrolysis, The Latest in ..	273				
Electrolytic Copper Residue ..	278				
Electrolytic Copper Residue ..	278				
Elliot Smoke Preventer. End of ..	98				
Emery Co., Ltd., The Diamond ..	97				
End, The Beginning of ..	391				
Engineers' Strike and Machines ..	212				
Esparto, French ..	212				
Exhibits at the Royal Show ..	268				
Explosion at Airdrie, 1b ..	376				
Explosion at a Chemical Works ..	279				
Explosion in a Laboratory ..	215				
Explosion of a Naphtha Lamp ..	294				
Explosion at Powder Mill ..	8				
Explosions on Tank Steamers ..	86				
Explosives Act, Working of ..	152				
Explosives Combine, The ..	104				
Explosives and the U.S.A. Tariff ..	179				
Exports of Alkali and Bleach .. 51, 104, 179, 246, 338 ..	179				
Exports and Imports for June ..	114				
" " " " July ..	181				
" " " " Aug. ..	217				
" " " " Sept. ..	393				
" " " " Oct. ..	402				
" " " " Nov. ..	104				
Exports of Petroleum from U.S.A. .. 130, 180, 227, 327, 359 ..	130, 180, 227, 327, 359				
Eyesight and Arc Light ..	359				
F					
Factory Inspectors and Dangerous Trades ..	326				
Failure in the Chemical Trade ..	120, 186				
Faraday Memorial Bust ..	361				
Fatal Explosion at Cycle Factory ..	373				
Fatality at a Bleach Works ..	273				
Fatality at a Chemical Works ..	168, 247				
Fatality to a Chlorate Miller ..	360				
Fertilizer Trade of Savannah ..	214				
Fertilizer Act, Prosecution under ..	213				
Filters, Insanitary ..	275				
Fin de Seicle Warfare ..	152				
Fire at Bury Chemical Works ..	279				
Fire at a Colour Works ..	372				
Fire at a Curriers ..	291				
Fire, Destructive ..	101				
Fire, Fatal, at a Tar Works ..	376				
Fire at a Glass Works ..	66				
Fire Prevention Congress ..	376				
Fire in London. Water for ..	215				
Fire at a Rubber Works ..	69				
Fire at a Soap Works ..	152				
Fire at Southwalk ..	149				
Fish-oil and Guano Synd., Ltd. ..	230				
Flash, Point, Raising the ..	86				
Food and Drugs Bill ..	244, 277				
Foreign Competition and the Chemical Trade ..	215				
Foreign Trade, Notes on ..	294				
France, Agricultural Education in ..	232				
France, Iodine in ..	392				
Fraud-preventing Paper ..	312				
French Esparto ..	212				
G					
Galvanisers' Pickle in Sewers ..	82				
Gas Light and Coke Co., Ltd. ..	56				
Gas Natural, The American Conflict ..	226				
Gaspé, Oil Fields of ..	34, 376				
"Gassing" Fatality, A ..	248, 375				
Gas Works, Accident at ..	345				
Gazette Notices:—42, 90, 266, 314, 345 ..	377				
Geneva, Carbide Works at ..	86				
German and Belgian Treaties ..	325				
German Travellers' Training ..	374				
Germany and the Dingley Tariff ..	117				
Germany India-rubber Trade ..	259				
Germany, Soda Production in ..	262				
Germany, Technical Education in ..	262				
H					
Hair-brained Sewage Scheme, A ..	258				
Hair Wash Accident, The ..	69, 84, 101				
Hartlepool Pulp and Paper Co., Ltd. ..	167				
Hencke-Cutliffe Sludge Process ..	280				
Herb Beer, Intoxicating ..	120				
Hints on Strikes ..	404				
Holiday Resorts and Guides ..	50				
Holmes Oil Co., Ltd. ..	69				
Hull Exports:—15, 31, 47, 63, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 413 ..	349				
Hull Imports:—12, 28, 44, 60, 76, 92, 108, 125, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 395, 410 ..	349				
Hull Paint, &c., Report:—9, 25, 41, 57, 74, 89, 121, 137, 153, 169, 185, 201, 233, 249, 265, 281, 296, 313, 329, 344, 361, 377, 393, 408 ..	349				
I					
"Ideal" Acetylene Generator ..	260				
Illuminating with Acetylene ..	280				
Imports and Exports: June ..	114				
" " " " July ..	181				
" " " " Aug. ..	217				
" " " " Sept. ..	393				
" " " " Oct. ..	402				
" " " " Nov. ..	104				
India Paper Mills, In ..	117				
India-Rubber in Germany ..	245				
India-Rubber Growing Centres ..	338				
Indian Indigo Crop ..	405				
Indigo, Artificial ..	338				
Indigo Crop, the India ..	24				
Indigo, Use of White ..	161				
Inebriety, Dangers of ..	279				
Infusorial Earth Analyses ..	295				
In-anitary Filters ..	56, 120				
Institute of Chemistry ..	237				
Instructive Case, An ..	103				
International Wrong, An ..	120				
Intoxicating Herb Beer ..	232				
Iodine in France ..	401				
Iodine, Position of ..	72				
Iron and Coal Trades in U.S.A. ..	166				
Iron Trade and American Competition ..	260				
Iron Smelting in Ireland ..	361				
Iron and Steel Plant Co. ..	306				
Iron and Steel Process, Edison's ..	392				
Iron Trade, The Cleveland ..	147				
Ireland, Song of the ..	174				
Italian Exhibition, The ..	324				
Italy, Tartaric Acid Materials in ..	311				
J					
Japan Coalfield ..	370				
Java, Petroleum in ..	370				
K					
Kansas Gypsum ..	279				
Kaolin and Manganese in U.S.A. ..	194				
Kaolin, Technical Definition of ..	262				
Kellner-Partington Dividend ..	291				
Kent Coalfields Syndicate Ltd. ..	261				
Kent Coalfield, The ..	249				
Kynoch Ltd., Messrs. ..	1				
L					
Laboratory, Explosion at ..	279				
Lagunas Nitrate Co., Ltd. ..	390				
Lagunas Syndicate Ltd. ..	390				
Lamp, a New Electric ..	148				
Lamps and Petroleum, Suggestions ..	275				
Lancashire Coal Association ..	391				
Lancashire, Technical Education in ..	168				
Lautaro Nitrate Co., Ltd. ..					

	Page
Manchester Exports:—14, 31, 47, 64, 78	24, 111, 177, 242, 259, 275, 290, 297, 213
228, 254, 270, 285, 302, 319, 334, 350, 367	358, 399, 412.
Manchester Imports:—11, 27, 43, 50, 75	121, 105, 123, 139, 156, 171, 187, 203, 210
235, 251, 277, 283, 299, 315, 331, 347, 364	379, 395, 409.
Manchester Men and Liverpool	
Gentlemen	238
Manchester Rivers Committee Resigns	296
Manchester and Salford Sewage	
Scheme, Proposed Combination	194
Manchester Sewage Scheme, 81, 119, 133	154, 166, 171, 184, 213, 228, 316, 374.
Manchester Sewage Sludge Steamer	386
Sewage Works	219
Water Consumption	98
Manganese Alloys	279
in Brazil	211
Exports Spanish	103, 168
and Kaolin in U.S.A.	114
via the Ship Canal	183
Silver	216
Manure Material Report:—9, 24, 40, 55	73, 89, 105, 121, 137, 153, 169, 185, 201
217, 231, 248, 64, 280, 296, 312, 328, 344	361, 376, 397, 406.
Manning Wheat and Barley Crops.. ..	50
Matches, Unsale	290
Medical Use of Oxygen	404
Memoranda, Official:—68, 117, 166, 270	324
Mersey Salt Shipments, from	184, 307
Metall Market:—0, 21, 41, 56, 73, 89, 105,	121, 136, 153, 166, 185, 201, 217, 231, 248,
265, 280, 311—44, 31—397, 406.	
Michigan Alkali Co.	311
Midland, Coal in	200
Milk Adulteration	24
Mine, Suffocated in	195
Minerals in China	34
Mineral Statistics	215
Mines, Oxygen Apparatus for	325
Mining Disaster, The Laxey	216
Mining Explosives, Testing	217
Mining and Metallurgy, Institution of	375
Miscellaneous Chemicals:—8, 24, 40, 56,	72, 88, 105, 120, 136, 152, 169, 184, 200,
216, 232, 243, 264, 280, 296, 312, 328, 344,	361, 376, 397, 406.
Mixer, An Enamelled	180
Monopolies in Spain	103
Morecambe Hay Pier	195
More Soap "Limited"	279
N	
Naphtha Explosion	215
National Physical Laboratory	88
Natural Gas Conflict, The American	164
Natural Gas and Oil in B. C.	231
Navigation of the Weaver	370
Near It, Very Near It	292
Ne Sater <i>Ultra Crepidam</i>	193
New Brooms	337
New Companies	
Acetylene Gaslight, Power and	
Calcium Carbide Co., Ltd.	122
Airedale Varnish Co., Ltd.	202
Allen, G. C., Ltd.	154
Anglo-American China Clay Syn.,	
Ltd.	313
Anglo-Austrian Petroleum Co., Ltd.	138
Anglo-Asian Oil Co., Ltd.	58
Anglo-Italian Talc and Plumbago	
Mines Co., Ltd.	170
Anglo-Russian Cement Co., Ltd.	311
Anglo-Russian Petroleum Co., Ltd.	266
Atmospheric Nitrogen Co., Ltd.	90
Austrian Asbestos syn., Ltd.	90
Baku Oil Co., Ltd.	407
Barnes W. C. & Co., Ltd.	345
Barnclough & Co., Ltd.	345
Barrow-in-Furness Non-Inflam-	
nable Wood Co., Ltd.	249
Bellevue Petroleum Co., Ltd.	218
Blaencallan Paint Works, Ltd.	314
Bloomfield and Scurbridge Brick	
Co., Ltd.	254
Bond's Soap Co., Ltd.	186
Booth & Co., Ltd.	186
Britannia Soap Co., Ltd.	293
British Drying Co., Ltd.	106
British Drysaltery Co., Ltd.	40
British Incandescent Mantle Co., Ltd.	393
Briti h Viscoid Co., Ltd.	74
Broughton Copper Co., Ltd.	10
Burnden Tar Co., Ltd. (Bolton)	218
Cambrian Lubricants, Ltd.	294
Carbona Syn., Ltd.	394
Castle Brand Co., Ltd.	362
Cookson, J. & H. & Son, Ltd.	314
Craigpark Co., Ltd.	297
Cross Alex. & Sons, Ltd.	90
Cullen, J. & Co., Ltd.	138
Dee Estates, Ltd.	249
Dixon, R. & Co., Ltd.	218

	Page
Dock Soap Co., Ltd.	266
Droylesden Rubber Works, Ltd.	122
Edward's Air Pump Syn., Ltd.	249
Ellam, Jones & Co., Ltd.	122
Farnlow, G. & Co., Ltd.	362
Fenton's Patent Artificial Rubber	
Co., Ltd.	74
Fletcher, R. & Son, Ltd.	202
French Non-Inflammable Products	
Syn., Ltd.	314
Frontero Manganese Co., Ltd.	269
Fumelessite, Ltd.	216
George, W. & J., Ltd.	345
Gerona Copper Co., Ltd.	106
Gold Extraction and Bromide Re-	
covery Co., Ltd.	10
Greatrex, H. & Co., Ltd.	394
Gutta-percha Corporation, Ltd.	266
Halford, Plant & Co., Ltd.	170
Harveys, Ltd.	234
High Power Electrolyte Syndicate,	
Ltd.	234
Innox Tannery, Ltd.	349
Invicta Asbestos Co., Ltd.	106
Iron Pigment and Precipitant Co.,	
Ltd.	345
Jameson, W., Ltd.	407
Kempson & Co., Ltd.	281
Kent Collieries Co-operation, Ltd.	282
King, Walshaw & Co., Ltd.	370
La Campagnie d'Acier St. Denis, Ltd.	266
Laidlaw, Mackell & Co., Ltd.	154
Lanosap, Ltd.	407
Lennox-Reynolds & Fife Ltd.	186
Liver Galvanising Co., Ltd.	345
Manchester Malt Vinegar Co., Ltd.	345
Matthew's White Lead Co. (District)	377
Mawdich Gold Extracting Syndi-	
cate, Ltd.	282
Maxim Carbide Process and Acety-	
lene Gas Syndicate Ltd.	362
Meldreth Portland Cement Co., Ltd.	394
Metallic Oxides Co., Ltd.	42
National Oil Co., Ltd.	26
New Reichenhall Co., Ltd.	58
Oriental Salt Co., Ltd.	377
Otto-Freeze Toilet Soap Co., Ltd.	34
Ozark Lead & Zinc Syndicate, Ltd.	26
Petrifite, Ltd.	234
Phillips, Hoskins & Co., Ltd.	74
Pimbley Economiser Co., Ltd.	154
Pioneer Oil Co., Ltd.	34
Plymco Co., Ltd.	42
Portsmouth Silica Co., Ltd.	214
Premier Antifouling Paint Co., Ltd.	186
Pure Acetylene and Carbide Co.,	
Ltd.	10
Richardson's Chemical Manure Co.,	
Ltd.	297
Robinson, J. & Co., Ltd.	42
Robinson, W., Ltd. (Manchester)	58
Robinson, W. & Co., Ltd. (of	
Clayton)	170
Roger le Beau & Co., Ltd.	314
Roumanian Pegamoid Syndicate,	
Ltd.	362
Russian Petroleum and Liquid Fuel	
Co., Ltd.	314
Safety Motor Syndicate, Ltd.	26
Saint John Sulphate Pulp Co., Ltd.	407
Sarawak Cutch Co., Ltd.	154
Serubun Tin Mining Co., Ltd.	90
Shott's Iron Co., Ltd.	297
Siderosthen Paint Syndicate, Ltd.	362
Sommerville & Co., Ltd.	362
South German Kaolin Works, Ltd.	74
Standard Glaze Brick Co., Ltd.	202
Standard Mica Exploration Co., Ltd.	394
Stiff & Co., Ltd.	294
Thomas Mills, Ltd.	26
Thornton & Co., Ltd.	58
Tinker and Holliday, Ltd.	138
Town's Refuse Utilization Syndi-	
cate, Ltd.	186
Unique Soap & Chemical Co., Ltd.	394
Vegetable Parchment and Chemical	
Co., Ltd.	322
Velvill Co., Ltd.	234
Vidal Fixed Aniline Dyes, Ltd.	295
Vivian, H. H. & Co., Ltd.	306
Walker, Wallis & Co., Ltd.	202
Wednesfield Chemical Syndicate,	
Ltd.	90
Welbach Incandescent Gas Light	
Co., Ltd.	407
Wendler Bros., Ltd.	138
Westfield Soap Co., Ltd.	249
West Norfolk Farmers' Manure and	
Chemical Co., Ltd.	122
Whitfield, T. & Co., Ltd.	282
Wilcocks, W. H. & Co., Ltd.	377
Worcester Leather Co., Ltd.	297
Wort & Co., Ltd.	218
Wrapping Machine Syndicate Ltd.	249
Zil Ltd.	42
New Conveyor Co., Ltd.	125

	Page
New Tamarugal Nitrate Co. Ltd.	403
New Zealand Cyanide Products in	405
New Zealand Sulphur	232
Nice for Norway	34
Nickel Mines of Ontario	168
Nitrate Combine, End of	264
Nitrate, Depression in Chili	168
Nitrate Industry, Chili and the	118, 229
Nitrate Position, The	343
Nitrate Production, Restricting	34
Nitrate of Soda, Position of	20, 35, 209
Nitrate Statistics:—24, 83, 165, 230, 312,	373, 476
Nitro-Naphthalenes, Preparation of	116
Non-inflammable Wood Co. Ltd.	244
Nordenfeldt-Vickers, Amalgamation	216
Northwich, Subsidence at	248
Norway, Nice for	34
Notes on American Chemical Industry	114
Notes on Foreign Trade	215
Notes on Petroleum	259
O	
Obituary—	
Brewster, B.	216
Doulton, Sir H.	322
Dyson, A.	262
Eaton, E.	403
Jackson, T.	247
Mariott, H. W.	232
Meyer, Prof. V.	98
Moseley, J.	85
Mundella, A. J.	55
Webb, T.	312
"O. J. c." Lessons, Technical	312
Official Memorandum:—70, 117, 196, 276,	314
Oil, Bad and Cheap Lamps	180
Oil Engines and the War Office	163
Oil Fields of Gaspe	226
Oil Monopoly and Germany	391
Oil, Russian for Manchester	212, 375
Oil Trade, Future of the Russian	34
Oils, Low Flash Condensed	88, 311
Ontario, Nickel Mines of	168
Orte Destructor, The	84
Our Book Shelf—	
Analysts' Laboratory Companion.	
A. E. Johnson	200
Alkali Works, Thirty-third Annual	
Report on	246
Catalogues	200, 310
Commercial Uses of Coal Gas	310
T. Fletcher	310
Course of Practical Chemistry.	
Part I. M. M. P. Muir	310
Handy Book for Brewers. H. E.	
Wright	310
Introduction to the Study of	
Chemistry. W. H. Perkin, jun.,	
and B. Leon	54
Junior Course of Practical Chemis-	
try (new edition). F. Jones	54
Mineral Oils and their By-products.	
I. J. Redwood	54
Organic Chemical Manipulation.	
J. T. Hewitt	310
Pamphlets	200, 310
Oxygen, Absorbed, Test for	370, 389
Oxygen Bottle—Where was it!	279
Oxygen, Medical use of	404
Oxygen Rescue Apparatus for Mines	315
Oxygen for Ulcers	216
P	
Pacific Borax and Redwood's Chem.	
Co. Ltd.	22
Paints, a User's View of	167
Pamphlets	200
Papermakers Combine, The American	213
Papermakers' Exhibition	7
Paper Mills Indian	117
Paper Mills, Work in	184
Paper Trade and Australia	232
Paper Fraud, Preventing	332
Paraffin Wax in Confectionery	215
Parliamentary Jottings:—	
Partnerships Dissolved:—42, 90, 345, 377	
Patent Agents' Society	341
Patent Regulations	322
Patent Abstracts	258
Patent Law Reform	70, 181, 225, 226
Patent Laws, American	312
Patent List:—3, 19, 35, 51, 67, 83, 99, 115,	131, 147, 163, 179, 195, 211, 277, 243, 259,
275, 291, 307, 323, 338, 355, 371, 387, 402	
Pears Ltd., A. and F.	280, 295
Peebles, A. M. and Son Ltd.	55
Perfect Sewage Process, The	66
Percarbonate of Potassium	261
Peruvian Corporation Ltd.	372
Personal:—	
Austen, Dr. P. T.	88
Bower, N. A.	246
Chance, A. M.	731
Clowes, D. and F.	243

	Page
Bibdin, W. J.	248, 340
Follows, F. W.	376
Kippings, F. S.	376
Leithart, J. H.	314
Mond A.	405
Wiedemann, Dr.	391
Petrifite Ltd.	392
Petroleum Exports:—104, 130, 182, 227, 327	
Petroleum in Java	370
Petroleum Store on Fire	309
Petroleum Notes	259
Petroleum Inquiry, The	230
Petroleum and Lamps, Suggestions on	148
Petroleum Hair Wash Fatality 69, 84, 107	
Petroleum Fatalities 53, 84, 139, 215, 280,	391, 405.
Petroleum, What is meant by ?	82
Petroleum and the Ship Canal	168, 376
Petroleum Fire at Baku	53
Petroleum Production	196, 370
Petroleum Monopoly, The Spanish	131
Petroleum Russian, In Praise of	163
Petroleum Ship Blown up	152
Petroleum Trade in Russia	247, 307
Petroleum in Roumania	276, 324
Petroleum Fleet, a Sailing	295
Phillips Hoskin, and Co. Ltd.	279
Photograms of 1897	306
Phosphorus, Electric	248
Phosphorus in Steel	293
Phosphates, Algerian	56, 213, 120
Pimbley's Economiser	100
Pipeline Decision in the States	56
Platinum Trade of Russia	131
Pollution of the Dee	245
Pollution of the Derwent	56
Polyphase, Electric Plant	260
Porcelain Industry, The Limoges	146
Potassium, Percarbonate	261
Potato Disease, Preventing	289
Potteries, Lead Poisoning in	312
Powder Mill Explosion	294
Presentation to Mr. Bibdin	340
Preparation Coml. of Nitro-	
naphthalenes	116
Price of Ammonia Alkali	290
Price's Patent Candle Co. Ltd. 69, 163, 184	
Prices of Wood Pulp	392
Prices Current:—16, 31, 48, 64, 80, 96, 112,	128, 144, 160, 176, 192, 208, 224, 240, 256,
272, 288, 304, 4, 0, 536, 352, 368, 374, 400,	414.
Priority, A Matter of	17
Production of Aluminium	152
Production of Petroleum	296
Promoting Companies	243
Prosecution under Fertiliser Act	213
Pump Combined Vacuum and Com-	
pression.	70
Q	
Quebracho, Uses of	118
Queries	198, 227
Quinine, World's Supply of	98, 135
R	
Rails and Accessories	356
Raspberry Wine and Salicylic Acid 200	
Reason Why, The	178
Reay, Lord, on Technical Education 371	
Reformer, An Un-formed	162
Reliance Lubricating Co., Ltd.	376
Report of Hull Paint, Oil, &c.:—9, 25,	41, 57, 74, 79, 121, 137, 153, 169, 185,
201, 233, 249, 265, 281, 297, 313, 329,	344, 361, 377, 393, 406.
Report on Manure Material:—9, 24, 40,	50, 73, 89, 105, 121, 137, 153, 169, 185,
201, 217, 233, 248, 264, 280, 296, 312,	328, 341, 361, 376, 392, 406.
Report on Tyne Chemicals:—9, 25, 41,	57, 73, 89, 105, 121, 137, 153, 169, 185,
201, 217, 233, 249, 265, 281, 297, 313,	319, 345, 362, 377, 393, 407.
Reports of Companies:—22, 69, 87, 149,	212, 230, 244, 261, 295, 306, 326, 341,
355, 372, 390, 403	
Resin Market, The	136, 354
Rhodin & The Castner-Kellner Patent 310	
Rhynney Iron Co.'s Affairs	220
Ribble, Condition of	388
Rio Tinto Co. Ltd.	244
River Pollution Case, The Rochdale, 397,	
402	
River Pollution in Cheshire	275
Rivers Board The West Riding	23
Rivers Committee, The Manchester,	
Resigns	296
Rivers Committee, The New Man-	
chester	328, 354
Rochdale Pollution Case	391, 402
Rock Salt, &c., in Turkey	274
Roumanian Petroleum	276, 324
Royal Show, Exhibits at the	4
Rubber in West Africa.	88
Rubber Works, Fire at	215
Runcorn, Brighter Prospects for	391

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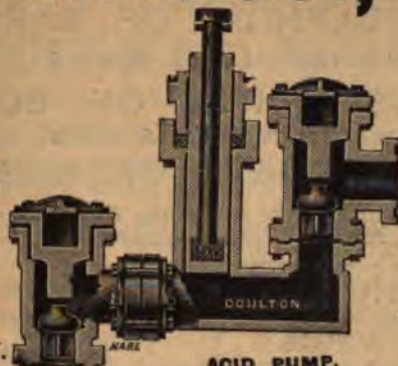
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Specification and Form of Tender may be had on application to Mr. W. Whatmough, Gas Manager. Contractors tendering for this work must pay their workpeople at least the standard or Trade Union rate of wages, and observe the trade conditions which attach to the various kinds of work for which the Tender is sent in.

Tenders endorsed "Acid," to be sent to the undersigned not later than Tuesday, July 13th, 1897.

Municipal Buildings,
Heywood,
July 1st, 1897.

By Order,

J. H. BALDWIN,
Town Clerk.**Miscellaneous.****Replies to Advertisements addressed to the
"Chemical Trade Journal" Office are forwarded to
Advertisers, post free.****TANKS for Gas and Chemical Works,**
Evaporating Pans, etc., Steel, Wrought or Cast
Iron, made to any dimensions. Several Second-hand,
up to 270,000 gallons capacity. New and Second-hand Gas
Apparatus offered cheap.—J. Firth Blakeley, Engineer,
Ravensthorpe, Yorks.**ADVERTISER, with wide experience**
in the Analysis and Manufacture of Acids, Alkalies,
Foods, Drugs, Artificial Manures, Tar Products, etc., etc.,
desires Situation as Chemist, Manager, or Superintendent.
—Address, "M. C. S.," Chemical Trade Journal Office,
Manchester.**ANALYTICAL CHEMIST.—**
Young Man, who has had a thoroughly practical
training in first-class Chemical Laboratory, desires Situation
in Chemical Works or Laboratory.—Address, R.
Buchanan, 374, Scotland-street, Glasgow.**CHEMIST requires an Appointment**
with Opening in Works or Laboratory. Graduate
of Victoria University (First-class Honours in Chemistry).
Experience in Agricultural Chemical Analysis. Salary
required very moderate.—Address, "V. O.," Chemical
Trade Journal Office, Manchester.**DEBENTURE AND PREFERENCE SHARES.****ENGLISH Industrial Limited Lia-**
bility Companies desirous of placing same, address,
"Promptitude," care of Deacon's Advertising Offices,
Leadenhall-street, London.**GENTLEMAN, having returned**
from the Colonies, is open for engagement as
Assistant Chemist in Chemical or Manufacturing Works at
home or abroad. References given.—Address, "Goslarite,"
Chemical Trade Journal Office, Manchester.**RELIABLE AGENT, who has a**
good connection with Dyers Wanted in Manchester,
for the Sale of Technical Lactic Acid. Terms for the
Supply of Crude Acid desired from Refiners.—State
references to X 97, care of Neyroud and Son, 14, Queen
Victoria-street, London, E.C.**TECHNICAL CHEMIST Wanted**
for a Chemical Works in Ireland; must have had
practical experience in the manufacture of fine Chemicals
and Pharmaceutical preparations.—Apply, "K. B. O.,"
Chemical Trade Journal Office, Manchester.**WANTED, at once, thoroughly**
capable **FOREMAN** for Sulphuric and Nitric Acid
Plant, &c.—Apply, stating age, wages, and experience, to
"Acid," Chemical Trade Journal Office, Manchester.**WANTED for abroad, Plans for the**
Erection of Plant and details of Working Process
for the Manufacture of Bichromate of Potash and Soda.
Communications held strictly confidential.—Address,
"E. F. B.," Chemical Trade Journal Office, Manchester.**WANTED, thoroughly competent**
and experienced **SOAP BOILER** for abroad.
Blue Mottled Soap must be a Speciality.—Address, stating
wages required, age, and if married or single, to "D. N. D.,"
Chemical Trade Journal Office, Manchester.

Miscellaneous.—Cont.

WANTED, a good steady Plumber for a Chemical Works in Dublin; must be strictly sober, and married—Apply, stating salary, to "V.M., Chemical Trade Journal Office, Manchester.

WANTED, Situation by Young Man (27), as Foreman over Nitric Acid, Sulphuric Acid, Muriatic Acid, Nitrosand Binitro. At home or abroad.—Address, "Nitros," Chemical Trade Journal Office, Manchester.

BOILERS, ENGINES, PUMPS, Cast and Wrought-iron TANKS, VACUUM and STEAM PANS, and every description of Second-hand PLANT and MACHINERY. Catalogues sent free on application.—Henry Roberts & Co., Engineers and Copper Smiths, Bancroft Road, Mile End, London, E.

CALCIUM CARBIDE for Sale in Large or Small Quantities.—Apply to E. Jasmin, Frankfort-on-Maine, Germany.

CRUDE SULPHOCYANIDE OF COPPER FOR SALE.—J. B. Aitken, Sal Ammoniac Works, Widnes.

FOR SALE, 10 Bound Volumes of the CHEMICAL TRADE JOURNAL for the years '92, '93, '94, '95, and '96. Complete with advertisements and in first-class condition.—Offers for the set or singly to "T.S.," Chemical Trade Journal Office, Manchester.

FOR SALE—The Illustrated Journal of Patents for 1895-6; 15s. per year.—Address inquiries to "P.J.," Chemical Trade Journal Office, Manchester.

FOR SALE, Two Iron Filter Presses, each 30 chambers, 1,000 x 1,000 mm, in first-class condition, latest construction by A. Dehne, nearly new, only used one year.—Apply, Technisch Bureau voor Chemische Industrie, Amsterdam.

FILTER PRESSES, in first-class condition, for Sale, with washing appliances, large sizes.—Address, "Filter Presses," Chemical Trade Journal Office, Manchester.

FILTER PRESSES for Sale—Several Second-hand, in first-class order. Low prices to clear.—R. W. Andrews and Co., 24, Gray's Inn Road, London, W.C.

RAILWAY TANKS for HIRE.—Brotherton and Co., Ammonia Distillers, Leeds.

STEARINE PITCH—Large quantities of different qualities for Sale.—For particulars apply to "R. O. C.," care of O. Forst, Bookseller, Antwerp, Belgium.

TO CHEMICAL WORKS and Others.—For SALE, large number of Wrought and Cast Iron TANKS up to 17 feet diameter, all lengths. Enquiries solicited.—Apply, Thos. W. Ward, Fitzalan Chambers, Sheffield.

WANTED to Purchase for abroad, MSS. Articles, practical recipes, and Trade secrets of every description in Oils, Colors, Paints, Varnishes, Soaps, Greases, Chemicals, etc., new methods working waste products, and any good articles connected with the allied trades.—Address, "C. S. J.," Chemical Trade Journal Office, Manchester.

GAS TAR and **AMMONIACAL LIQUOR** Wanted.—Apply, Josiah Hardman, Milton, Staffs.

SULPHURIC ACID FOR SALE (H.O.V. & R.O.V.) Made from Spent Oxide.—J. Hardman, Chemical Works Milton, Staffs. Correspondence invited.

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GLUES, PREPARED PITHS, Precipitated Bone Phosphate, Neatsfoot Oil,
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IRON and STEEL (butt or lap welded),
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COILS for heating, super-heating, distilling and refrigerating purposes to 500 feet long without joints.

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Globe Tube Works, Wednesbury, and 14, Great St. Thomas Apostle, Cannon-st., London, E.C.

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JOHN NICHOLSON & SONS,
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Northern Office: 224, Effingham Road Sheffield.

HARPERS'
LIST.

PAGES 14 and 15
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MANGANESE,
Up to 95%
FLUOR SPAR, finest 98/99 per cent
white quality.
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Especially suitable for certain
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Glasgow: West Campbell St.

Manchester: Oldham Road,
London: Watling Street E.C.

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AIR COMPRESSING ENGINES.
GAS COMPRESSING ENGINES.

150,000 I.H.P. ALREADY AT WORK.

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EXHAUST AND BLAST FANS.

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FLUORIDE OF CHROME (Patented). ANTIMONY SALTS.
TARTAR EMETIC. HYPOSULPHITE OF SODA.
SUGAR OF LEAD, WHITE AND BROWN.
ZINC OXIDE, OXALIC, ACETIC, TANNIC, & SALICYLIC
ACIDS, NITRATE & CHLORIDE OF BARIUM, &c.

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SODA ASH 58%	Phosphoric Acid	Castor Oil	Amidol, Metol, Glycin,
POTASHES	Acetates	Olive Oil	Thiocarbamid and other
SALTCAKE	Oxalic Acid	Essent. Oils	Photographicals,
BLEACH	Tartaric Acid	Glucose	Lumieres,
LITHIA SALTS	Salicylic Acid	Grape Sugar	D. & Plates,
BORAX	Carbolic Acid	Cane Syrup	&c., &c.
MERCURIALS	Camphor	Treacle	
SUL. COPPER	Stearine	Nitrate of Silver	(Pure)
PRUSSIATES	Glycerine		
CYANIDES	OLEINE		
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Photographic Developers,
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Also OILS and PRODUCE.

SAMPLES AND PRICES ON APPLICATION.

Tender.

CORPORATION OF BIRKENHEAD.

TO OXIDE OF IRON MERCHANTS.

THE Corporation of Birkenhead are prepared to receive TENDERS for the Supply of 350 Tons of OXIDE OF IRON.

Forms of Tender and other information may be obtained from Mr. T. O. Paterson, Gas Engineer, Gas Works, Thomas-street.

Tenders, sealed and endorsed "Tender for Oxide of Iron," to be sent to me not later than 5 p.m. on Friday, 23rd July, 1897.

Deliveries to be made within one month of written instructions from the Gas Engineer.

The Corporation do not bind themselves to accept the lowest or any Tender.

By Order,
Town Hall, Birkenhead,
16th July, 1897.
ALFRED GILL,
Town Clerk.

Miscellaneous.

Replies to Advertisements addressed to the "Chemical Trade Journal" Office are forwarded to Advertisers, post free.

TANKS for Gas and Chemical Works, Evaporating Pans, etc., Steel Wrought or Cast Iron, made to any dimensions. Several Second-hand, up to 270,000 gallons capacity. New and Second-hand Gas Apparatus offered cheap.—J. Firth Blakeley, Engineer, Ravensthorpe, Yorks.

ADVERTISER, with wide experience in the Analysis and Manufacture of Acids, Alkalies, Foods, Drugs, Artificial Manures, Tar Products, etc., etc., desires Situation as Chemist, Manager, or Superintendent.—Address, "M. C. S.," Chemical Trade Journal Office, Manchester.

ALKALI WORKS—Manager desires Re-engagement. Experienced in Acid, Alkali, Bleach, Bichrome, and Superphosphate Manufacture, and Tar Distilling. Experienced Engineer and Chemist. First-class references and testimonials.—Address "Manufacture," Chemical Trade Journal Office, Manchester.

ANALYTICAL CHEMIST.—Young Man, who has had a thoroughly practical training in first-class Chemical Laboratory, desires Situation in Chemical Works or Laboratory.—Address, R. Buchanan, 224, Scotland-street, Glasgow.

CHEMIST Wanted for Manure Works. Letters only, stating age, references, experience, and salary required, to Chemist, 250, Dashwood House London, E.C.

DEBENTURE AND PREFERENCE SHARES.

ENGLISH Industrial Limited Liability Companies desirous of placing same, address, "Promptitude," care of Deacon's Advertising Offices, Leadenhall-street, London.

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A Practical Man, with over 20 years' continuous practice, wants Situation in Acid or Alkali Works; good recommendations.—Address, "A.," George Gibbon, 15, Lansdown-street, Harpurhey, Manchester.

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RELIABLE AGENT, who has a good connection with Dyers Wanted in Manchester, for the Sale of Technical Lactic Acid. Terms for the Supply of Crude Acid desired from Refiners.—State references to X 97, care of Neyroud and Son, 14, Queen Victoria-street, London, E.C.

TECHNICAL CHEMIST Wanted for a Chemical Works in Ireland; must have had practical experience in the manufacture of fine Chemicals and Pharmaceutical preparations.—Apply, "K. B. O.," Chemical Trade Journal Office, Manchester.

WANTED, at once, thoroughly capable FOREMAN for Sulphuric and Nitric Acid Plant, &c.—Apply, stating age, wages, and experience, to "Acid," Chemical Trade Journal Office, Manchester.

CORRESPONDENCE SOLICITED.

Miscellaneous.—Cont.

WANTED, First-class Chemical Plumbers. None other need apply.—Address, J. Taylor & Co., Chemical Plumbers, Bolton.

BOILERS, ENGINES, PUMPS, Cast and Wrought-iron TANKS, VACUUM and STEAM PANS, and every description of Second-hand PLANT and MACHINERY. Catalogues sent free on application.—Henry Roberts & Co., Engineers and Copper Smiths, Bangcroft Road, Mile End, London, E.

BORAX—Offers Wanted by one of the largest German Import Houses.—Address, "Borax," *Chemical Trade Journal* Office, Manchester.

CALCIUM CARBIDE for Sale in Large or Small Quantities.—Apply to E. Jasmin, Frankfort-on-Maine, Germany.

CRUDE SULPHOCYANIDE OF COPPER FOR SALE.—J. B. Aitken, Sal Ammoniac Works, Widnes.

OFFERS Wanted for Ten well-bound Volumes, 122 to 126 of *Chemical Trade Journal*, unsoiled and in splendid condition. Owner now out of the Chemical trade.—Address, R. 32, *Chemical Trade Journal* Office, Manchester.

FOR SALE—The Illustrated Journal of Patents for 1895-6; 15s. per year.—Address inquiries to "P.J." *Chemical Trade Journal* Office, Manchester.

FOR SALE, Two Iron Filter Presses, each 30 chambers, 1,000 x 1,000 mm, in first-class condition, latest construction by A. Dehne, nearly new, only used one year.—Apply, Technisch Bureau voor Chemische Industrie, Amsterdam.

FILTER PRESSES, in first-class condition, for Sale, with washing appliances, large sizes.—Address, "Filter Presses," *Chemical Trade Journal* Office, Manchester.

FILTER PRESSES for Sale—Several Second-hand, in first-class order. Low prices to clear.—R. W. Andrews and Co., 24, Gray's Inn Road, London, W.C.

RAILWAY TANKS for HIRE.—Brotherton and Co., Ammonia Distillers, Leeds.

STEARINE PITCH—Large quantities of different qualities for Sale.—For particulars apply to "R. O. C.," care of O. Forst, Bookseller, Antwerp, Belgium.

TO CHEMICAL WORKS and Others.—For SALE, large number of Wrought and Cast Iron TANKS up to 17 feet diameter, all lengths. Enquiries solicited.—Apply, Thos. W. Ward, Fitzalan Chambers, Sheffield.

GAS TAR and AMMONIACAL LIQUOR Wanted.—Apply, Josiah Hardman, Milton, Staffs.

SULPHURIC ACID FOR SALE (S.O.V. & R.O.V.) Made from Spent Oxide.—J. Hardman, Chemical Works Milton, Staffs. Correspondence invited.

WOODEN VESSELS of every description, New or Second-hand; all shapes, dimensions, and capacities. We have on hand the largest stock in England, and firms requiring anything in this direction are kindly invited to write for particulars, etc., to Henry Roberts & Co., Vat and Back Makers, Bancroft Road, London, E.

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IRON and STEEL (butt or lap welded), and FITTINGS for Gas, Water, Steam, Liquid Ammonia, and Hydraulic Work, galvanized white enamelled inside, or coated by Dr. Angus Smith's Composition. In stock to 8 in. diameter. **COILS** for heating, super-heating, distilling and refrigerating purposes, to 500 feet long without joints.

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SAML. MEGGITT & SONS, LTD.,

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PAGES 14 and 15
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Liverpool: Exchange Chambers, Glasgow: West Campbell-st.

Manchester: Oldham Road, London: Worship Street E.C.

WALKER BROS., ENGINEERS, PAGEFIELD IRONWORKS, WIGAN.

WALKERS' PATENT
AIR COMPRESSING ENGINES.
GAS COMPRESSING ENGINES.
150,000 I.H.P. ALREADY AT WORK.

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EXHAUST AND BLAST FANS.

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PETER SPENCE & SONS,

Manchester Alum Works, MANCHESTER.

R. W. GREEFF & CO.,
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IMPORTERS OF

PUREST SULPHATE OF ALUMINA.

FLUORIDE OF CHROME (Patented). ANTIMONY SALTS.

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IRON OXIDE, OXALIC, ACETIC, TANNIC, & SALICYLIC

ACIDS, NITRATE & CHLORIDE OF BARIUM, &c.

SPECIALITIES:—

SODA ASH 58%	Phosphoric Acid	Castor Oil	Amidol, Metol, Glycin,
POTASHES	Acetates	Olive Oil	Thiocarbamid and other
SALTCAKE	Oxalic Acid	Essent. Oils	Photographicals,
BLEACH	Tartaric Acid	Glucose	Lumieres,
LITHIA SALTS	Salicylic Acid	Grape Sugar	Dry Plates,
BORAX	Carbolic Acid	Cane Syrup	&c., &c.
MERCURIALS	Camphor	Treacle	
SUL. COPPER	Stearine	Nitrate of Silver	(Pure)
PRUSSIANES	Glycerine		
CYANIDES	OLEINE		
METALS			
MINERALS			
BRIMSTONE			
SULPHUR			

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CHEMICALS,

Pharmaceutical Products,

Photographic Developers,

Drysalteries and Drugs,

Also OILS and PRODUCE.

SAMPLES AND PRICES ON APPLICATION.

Tenders.

RADCLIFFE & PILKINGTON GAS COMPANY.

TO TAR DISTILLERS.

THE Directors of this Company invite Tenders for the purchase of 900 tons of the surplus TAR to be produced at their works in Radcliffe during the twelve months commencing the 1st day of October next.

Particulars may be obtained from the undersigned, to whom endorsed Tenders must be delivered not later than Tuesday, the 31st inst.

JAS. BRADDOCK,
Manager and Secretary.

Gas Works, Radcliffe,
August 18th, 1897.

BOROUGH OF WIDNES.

THE Corporation invite Tenders for the purchase of from 900 to 1,000 tons of GAS TAR, from their Gas Works, for the twelve months ending 30th September, 1898. Forms of tender and conditions of contract may be obtained from Mr. Isaac Carr A.M.I.C.E., Gasworks, Widnes. Tenders, endorsed "Tar," to be delivered to the undersigned not later than the 6th September prox. The Corporation do not bind themselves to accept the highest or any tender.

H. S. OPPENHEIM,
Town Clerk.

Town Hall, Widnes,
13th August, 1897.

Miscellaneous.

Replies to Advertisements addressed to the "Chemical Trade Journal" Office are forwarded to Advertisers, post free.

SHADWELL, E.—AS A GOING CONCERN.

Messrs. BRADSHAW, BROWN & Co. will sell by Public Auction, at the Mart, Tokenhouse Yard, Lothbury, London, E.C., on Tuesday, September 14th, 1897, at 2 o'clock precisely, the Freehold Manufacturing Premises known as "Mitchell's Bone Boiling Works," situate in Coleman-st., New Gravel Lane, together with the Goodwill and Business of a Bone Boiler, Soap Maker, and Fat Melter, with the valuable rights of carrying on same within the Metropolitan area.

The Property has an area of about 17,247 feet super. with substantial and well lighted Brick Buildings erected thereon, comprising:—Bone Boiling House, Soap Factory and Melting House, Bone Grinding and Sorting Rooms, Offices and Stores, Extracting House, Fat Purifying and Cooling Room, Boiler House, Stabling and Stores, and Wheelwright's Shop, also large Open Yard. The Fixed Plant and Machinery is included in the sale. Stock, etc., at a valuation. Solicitors, Messrs. Stones, Morris, and Stone, 5, Finsbury-circus, London, E.C. Auctioneers' Offices, Billiter Square Buildings, London, E.C., and Millwall, London, E.

ADVERTISER, with wide experience in the Analysis and Manufacture of Acid, Alkalies, Foods, Drugs, Artificial Manures, Tar Products, etc., etc., desires Situation as Chemist, Manager, or Superintendent.—Address, "M. C. S.," Chemical Trade Journal Office, Manchester.

DYE and COLOUR WORKS.—

Chemist, experienced in the Manufacture of the more important Aniline Colours and Coal Tar Dyes, is open for engagement. Experienced Chemical Engineer.—Address, "Benzidine," Chemical Trade Journal Office, Manchester.

SOAP and CANDLE WORKS.—

Manager or Chemist seeks re-engagement. Thoroughly practical and up-to-date in all kinds of Soaps, Candles, and Perfumery. Well up in Engineering and Building Construction. Excellent references.—Address, "Soap," Chemical Trade Journal Office, Manchester.

TECHNICAL CHEMIST (A.I.C.)

desires post as Works Manager or Head Chemist. Has designed and erected Plant. Experience with Nitric Acid, Nitrates of Baryta and Strontia, Manganese Salts, Phosphoric Acid, Sugar of Lead, &c.; well up in chemical operations generally; commercial analyst. Moderate salary.—Address, "Works," Chemical Trade Journal Office, Manchester.

WANTED, Foreman to Manage

Sulphuric Acid Plant; must be well used to Spent Oxide and Pyrites.—Apply by letter, stating age, past experience, and terms, addressed "Foreman's care of Harry B. Wood & Co., 45, Hanging Duch, Manchester.

CORRESPONDENCE SOLICITED.

Miscellaneous.—Cont.

BOILERS, ENGINES, PUMPS,
Cast and Wrought-iron TANKS, VACUUM and
STEAM PANS, and every description of Second-hand
PLANT and MACHINERY. Catalogues sent free on
application.—Henry Roberts & Co., Engineers and Copper
smiths, Bancroft Road, Mile End, London, E.

CALCIUM CARBIDE for Sale, in
Large or Small Quantities.—Apply to E. Jasmin
Frankfort-on-Maine, Germany.

FOR SALE, a quantity of Canadian
PEARL ASH, prime quality.—Address, "Ash,"
Chemical Trade Journal Office, Manchester.

FOR SALE—The Illustrated Journal
of Patents for 1895-6; 15s. per year.—Address in-
quiries to "F.J." Chemical Trade Journal Office, Man-
chester.

FILTER PRESSES, in first-class
condition, for Sale, with washing appliances, large
sizes.—Address, "Filter Presses," Chemical Trade
Journal Office, Manchester.

SOAP PLANT.—Wanted Pans and
Frames, second-hand or new. Please state par-
ticulars and prices.—Address, "Soap," W. H. Smith and
Son, Union-street, Birmingham.

SULPHIDE OF IRON for Sale,
very good quality. Inquiries solicited.—John Nichol-
son and Sons, Limited, Chemical Works, Hunslet, Leeds.

SULPHURIC ACID for SALE—
R.O.V., D.O.V., and B.O.V., made from Sulphur.—
Enquiries solicited.—John Nicholson & Sons, Limited
Leeds.

TO CHEMICAL WORKS and
Others.—For SALE, large number of wrought and
cast-iron TANKS, all shapes and all sizes. Particulars on
application. Enquiries solicited.—Apply, Thomas W.
Ward, Fitzalan Chambers, Sheffield.

WANTED, Supplies of Old Lead,
chemically pure.—Send full particulars to W. R. S.,
Chemical Trade Journal Office, Manchester.

WANTED, Regular Consumers of
50/100 tons soft Manganese Ore per month.—
85/88, 88/90, 92/95 per cent. MnO_2 , impalpably powdered,
at very cheap cash prices.—Address "Manganese,"
Chemical Trade Journal Office, Manchester.

WOODEN VESSELS of every
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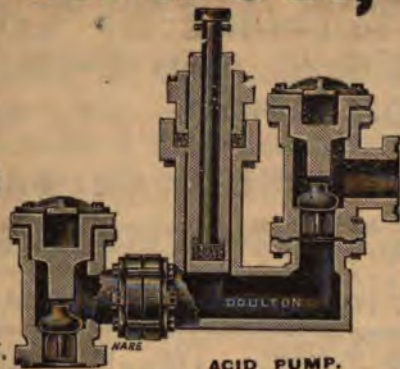
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SURPLUS TAR, to be produced at their Works, and
delivered into Contractor's boats during the twelve months,
commencing 1st November next.
Tenders to be sent in on or before 1st October.
Gas Works, Kidderminster,
4th September, 1897.**

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TAR, produced during year, from October 1st, 1897. About
5,000 tons.
Tenders endorsed "Tender for Tar," to be sent in by
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Particulars may be had from the undersigned.
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Engineer.
Gas Office, Blackpool,
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Re G. W. STONES in Bankruptcy.

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HAMER, F.A.I.,** have the honour to announce the
receipt of instructions from Mr. T. Waterworth, A.C.A.,
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right circular lead pots, with iron pans attached, patent
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steam boiler, two horizontal steam engines, colour grinding
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lot, and if not sold then, will immediately be sold piecemeal
as per catalogue.On view to holders of catalogues any day up to time of
sale.

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**PAGES 14 & 15
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The highest or any tender not necessarily accepted.

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156th, 157th, 158th, 159th, 160th, 161st, 162nd, 163rd, 164th, 165th, 166th, 167th, 168th, 169th, 170th, 171st, 172nd, 173rd, 174th, 175th, 176th, 177th, 178th, 179th, 180th, 181st, 182nd, 183rd, 184th, 185th, 186th, 187th, 188th, 189th, 190th, 191st, 192nd, 193rd, 194th, 195th, 196th, 197th, 198th, 199th, 200th, 201st, 202nd, 203rd, 204th, 205th, 206th, 207th, 208th, 209th, 210th, 211th, 212th, 213th, 214th, 215th, 216th, 217th, 218th, 219th, 220th, 221st, 222nd, 223rd, 224th, 225th, 226th, 227th, 228th, 229th, 230th, 231st, 232nd, 233rd, 234th, 235th, 236th, 237th, 238th, 239th, 240th, 241st, 242nd, 243rd, 244th, 245th, 246th, 247th, 248th, 249th, 250th, 251st, 252nd, 253rd, 254th, 255th, 256th, 257th, 258th, 259th, 260th, 261st, 262nd, 263rd, 264th, 265th, 266th, 267th, 268th, 269th, 270th, 271st, 272nd, 273rd, 274th, 275th, 276th, 277th, 278th, 279th, 280th, 281st, 282nd, 283rd, 284th, 285th, 286th, 287th, 288th, 289th, 290th, 291st, 292nd, 293rd, 294th, 295th, 296th, 297th, 298th, 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1387th, 1388th, 1389th, 1390th, 1391st, 1392nd, 1393rd, 1394th, 1395th, 1396th, 1397th, 1398th, 1399th, 1400th, 1401st, 1402nd, 1403rd, 1404th, 1405th, 1406th, 1407th, 1408th, 1409th, 1410th, 1411st, 1412nd, 1413rd, 1414th, 1

Miscellaneous.—Cont.

FOR SALE.—Askham Bros. and Wilson's SEPARATOR, as good as new.—Apply, "Exhibition," *Chemical Trade Journal* Office, Manchester.

FILTER PRESSES, in first-class condition, for Sale, with washing appliances, large sizes.—Address, "Filter Presses," *Chemical Trade Journal* Office, Manchester.

SULPHIDE OF IRON for Sale, very good quality. Inquiries solicited.—John Nicholson and Sons, Limited, Chemical Works, Hunslet, Leeds.

SULPHURIC ACID for SALE.—R.O.V., D.O.V., and B.O.V., made from Sulphur.—Enquiries solicited.—John Nicholson & Sons, Limited, Leeds.

TO CHEMICAL WORKS and Others.—For SALE, large number of wrought and cast-iron TANKS, all shapes and all sizes. Particulars on application. Enquiries solicited.—Apply, Thomas W. Ward, Fitzalan Chambers, Sheffield.

WANTED, a Bour or Wetzel Pan, new or Second-hand (in good condition).—Address particulars and lowest price to "Pan," *Chemical Trade Journal* Office, Manchester.

WATERFALL, about 9,500 effective horsepower; favourably situated; very moderate, for SALE. Lime, clay, peat, pyrites, close to. Thorvald M. Moe, Shipbroker, Drontheim.

WOODEN VESSELS of every description, New or Second-hand; all shapes, dimensions, and capacities. We have on hand the largest stock in England, and firms requiring anything in this direction are kindly invited to write for particulars, etc., to Henry Roberts & Co., Vat and Back Makers, Bancroft Road, London, E.

GAS TAR and **AMMONIACAL LIQUOR** Wanted.—Apply, Josiah Hardman, Milton, Staffs.

SULPHURIC ACID FOR SALE (R.O.V. & D.O.V.) Made from Spent Oxide.—J. Hardman, Chemical Works Milton, Staffs. Correspondence invited.

TO BE SOLD, the **LANCASHIRE MANURE COMPANY'S WORKS** at Widnes with Machinery and 24,430 square yards of Freehold Land.—Address J. Hosking, 16, Fenwick Street Liverpool.

TO be LET or SOLD, Chemical Works, situated between Marple and Romiley, on the Canal side, and until recently occupied by the Marple Chemical Co. Suitable for Manufacturing Glue, Size, Phosphates, Bleaching Liquor, or any secret processes. Good house attached.—Apply, A. E. Walker, 36, Bishop-street, Manchester, S.W.

PLATINUM Utensils, Scrap, Lamp Ends, etc. Best Prices given by Derby and Co. 44, Clerkenwell Road, London, E.C. N.B.—Platinum Sold

"UP-TO-DATE" RECIPES, NEW INVENTIONS and **SPECIALITIES** in Oils, Greases, Soaps, Paints, Varnishes, Enamels, Blackings, Blues, Polishers, etc., etc., practical working recipes with latest improved English, Continental and American methods, Prize and Gold Medal brands, Cheapened Substitutes, Utilization of Wastes and Refuse, etc.; any samples matched. Write for Lists.—Lewis Jameson & Co. Balmoral-buildings, 91, Queen Victoria-street, London, E.C., and at 68, Gibson-square, Islington, London, N.

AMMONIA, all qualities and strengths. Enquiries solicited. BROTHERTON & Co., Birmingham, Leeds, and Wakefield.

Advertisements which arrive too late for insertion on this page will be found, on first page of *Master* (opposite Leading Article).

J. STIFF & SONS,

MANUFACTURERS OF

CHEMICAL APPARATUS

IN VITRIFIED STONEWARE.

ACID PANS, ACID PIPES & CONNECTIONS, RECEIVERS, CONDENSING WORMS, RETORTS, COCKS, JARS, BOTTLES & INSULATORS, BATTERY JARS, POROUS CELLS, &c., &c.

LAMBETH, LONDON, S.E.



GLUE.

Manufacturers of all kinds of Fine, Scotch, Town, Medal, and other Glues, Gelatine, Size, Grease, Manure, Powdered Glues in all qualities, Starch, &c.

APPLY
The GROVE CHEMICAL CO., Ltd., Crown Works,
APPLEY BRIDGE, WIGAN, LANCs.

FULLER'S

BONE STEAMER.

Softens the Bones without extracting any of the Nitrogenous Substance.



Extraction of the Grease within an hour.

ESTIMATES FOR COMPLETE

BONE STEAMING AND GRINDING PLANT.

GRINDING MACHINERY

FOR EVERY DESCRIPTION OF MATERIAL.

W. M. FULLER, Jun.,

88, Great Charles Street, Birmingham

TUBES

IRON and STEEL, and FITTINGS,

for Gas, Water, Steam, Liquid Ammonia and Hydraulic Work. All kinds and sizes—Welded or Riveted.

Tanks, Pans, and all kinds of Ironwork for Chemical Work.

COILS for heating, super-heating, distilling and refrigerating purposes, to 300 feet long without joints.

JOHN SPENCER, Globe Tube Works, Wednesbury.

Manlove, Alliott & Co. Ltd.,
ENGINEERS,
NOTTINGHAM.

See Advertisement in first issue of this month.

SAML. MEGGITT & SONS, LTD.,
Glue, Gelatine, & Size Manufacturers,
SUTTON-IN-ASHFIELD, NOTTS.

(Late BINDLEY & SON, Ltd., SMETHWICK.)

HARPERS' LIST.

PAGES 14 and 15
LAST WEEK.

ALBUMENS, Pastes, Arabic Solution, Vegetable and Animal Size, Gums, **GLUES**, PREPARED PITHS, Precipitated Bone Phosphate, Neatsfoot Oil, Greases, Manure Materials, &c.

W. KING, Benson St., LIVERPOOL.

BRYAN CORCORAN, LTD.
MILLSTONE BUILDER.



WIRE WEAVER, MACHINE MANUFACTURER AND GENERAL MILL FURNISHER.

Sole Maker of **MILBURN'S** Patent Conoidal Stone Grinding Mills.

Especially suitable for certain materials, Wet or Dry.

Works and Warehouses:

Back Church Lane. Parcel Dept.: Basement of the Corn Exchange

31, MARK LANE, LONDON.

CANNINGTON, SHAW & CO., LIMITED,

CARBOYS.

SHERDLEY GLASSWORKS, ST. HELENS.

Liverpool: Exchange Chambers, Glasgow: West Campbell-st.

Manchester: Oldham Road, London: Worship Street E.C.

WALKER BROS., ENGINEERS, PAGEFIELD IRONWORKS, WIGAN.

WALKERS' PATENT
AIR COMPRESSING ENGINES.
GAS COMPRESSING ENGINES.
150,000 I.H.P. ALREADY AT WORK.

WALKERS' PATENT
EXHAUST AND BLAST FANS.

SPENCE'S ALUM.

PETER SPENCE & SONS,

Manchester Alum Works, MANCHESTER.

R. W. GREEFF & CO.,
3, EASTCHEAP, LONDON, E.C.
IMPORTERS OF

PUREST SULPHATE OF ALUMINA.
FLUORIDE OF CHROME (Patented). ANTIMONY SALTS.
TARTAR EMETIC. HYPOSULPHITE OF SODA.
SUGAR OF LEAD, WHITE AND BROWN.
ZINC OXIDE, OXALIC, ACETIC, TANNIC, & SALICYLIC
ACIDS, NITRATE & CHLORIDE OF BARIUM, &c.

SPECIALITIES:-

SODA ASH 58%	Phosphoric Acid	Castor Oil	Amidol, Metol, Glycin,
POTASHES	Acetates	Olive Oil	Thiocarbamid and other
SALTCAKE	Oxalic Acid	Essent. Oils	Photographicals,
BLEACH	Tartaric Acid	Glucose	Lumieres,
LITHIA SALTS	Salicylic Acid	Grape Sugar	Dry Plates,
BORAX	Carbolic Acid	Cane Syrup	&c., &c.
MERCURIALS	Camphor	Treacle	
SUL. COPPER	Stearine	Nitrate of Silver	(Pure)
PRUSSIANES	Glycerine		
CYANIDES	OLEINE		
METALS			
MINERALS			
BRIMSTONE			
SULPHUR			

IMPORTERS—Commission Merchants—EXPORTERS.
FUERST BROS.
FOR ALL
HEAVY OR FINE
CHEMICALS,
Pharmaceutical Products,
Photographic Developers,
Drysalters and Drugs,
Also OILS and PRODUCE.
LONDON: 17, Philpot Lane, E.C.

SAMPLES AND PRICES ON APPLICATION.

Tender.

MANCHESTER CORPORATION GAS WORKS
T A R.

THE Gas Committee of the Corporation of Manchester are prepared to receive Tenders for the Purchase and Removal of the whole or a portion of the T.A.R. in Stock and to be produced at their Roch Road Gas Works during the period commencing from 1st day of November, 1897, and ending on the 31st March 1899.

The Committee do not bind themselves to accept the highest or any Tender.

Sealed Tenders, addressed to the Chairman of the Gas Committee and endorsed "Tender for T.A.R." must be delivered at the Offices of the Gas Department, Town Hall, on or before 10 a.m. on Thursday, 28th instant.

Forms of Tender and further particulars may be obtained on application in writing to Mr. Charles Nickson, Superintendent of the Department.

By Order of the Gas Committee,
WM. HENRY TALBOT,
Town Clerk, Manchester,
15th October, 1897.

Miscellaneous.

Replies to Advertisements addressed to the "Chemical Trade Journal" Office are forwarded to Advertisers, post free.

FOR SALE, CHEMICAL WORKS at PARKHEAD AS A GOING CONCERN.

The Subscribers invite Offers, as a Going Concern, for the Business carried on by the CARNTYNE CHEMICAL COMPANY, LTD., PARKHEAD, GLASGOW. The principal Manufacture is Borax, for which there is a large demand, and the site admits of considerable extension of the Works as occasion requires.

Full particulars will be learned on application to Messrs. J. S. Galbraith and M'Gill, Writers, 69, St. Vincent-street; or to the Subscribers, with whom Offers must be lodged not later than Thursday, 28th Current, at 12 o'clock Noon; but the highest or any Tender may not be accepted.

HODGE & SMITH, C.A.
105, West George-street,
Glasgow, 12th October, 1897.

ANALYTICAL CHEMIST and
COLOUR MAKER (Honours Certificate), free at present, desires Situation in this branch. Special shades in Chromes, Prussian Blues, Greens, etc.—Address, "Alpha," Chemical Trade Journal Office, Manchester.

ADVERTISER desires Position as
MANAGER in Chemical Works; has had practical experience in the Manufacture of Sulphuric Acid, Sulphate of Copper, etc. Ten years' experience. At present Manager of Chemical Works in the Midlands.—Apply, "D.B.," Chemical Trade Journal Office, Manchester.

ASSISTANT CHEMIST. Young,
Energetic Man desires post in Chemical or Soap Works as assistant. Sound technical training. Well up in works analysis. Willing and able to assist generally on works and in stock-keeping. First-class references. Moderate salary to commence.—Address, "C.L.L.," Chemical Trade Journal Office, Manchester.

CHEMIST at liberty, owing to the
Closing of the Clippens Oil Works, Loanhead. First-class references.—Address, T. Foulis, 21, Jolliffe-street, Liverpool.

CHEMICAL ENGINEER (A.I.C.),
desires Engagement as Works Manager or Head Chemist; well up in Chemical operations generally; has laid down Plant and erected Manufacturing premises experienced Technical Analyst; late with eminent firm, from whom first-class testimonial; moderate salary.—Address, "Works," Chemical Trade Journal Office, Manchester.

CHEMIST seeks Position as Assistant in the Laboratory of Chemical or other Works, Spelter or Alkali preferred. Good testimonial.—Address, "Dawns," Chemical Trade Journal Office, Manchester.

BOILERS, ENGINES, PUMPS,
Cast and Wrought-iron TANKS, VACUUM and STEAM PANS, and every description of Second-hand PLANT and MACHINERY. Catalogues sent free on application.—Henry Roberts & Co., Engineers and Copper Smiths, Bancroft Road, Mile End, London, E.

CORRESPONDENCE SOLICITED.

Miscellaneous.—Cont.

CARBIDE of CALCIUM and Patent
Acetylene Gas Generator.—Sold by Read, Holliday
and Sons, Limited, Huddersfield.

CALCIUM CARBIDE for Sale, in
Large or Small Quantities.—Apply to E. Jasmin,
Frankfort-on-Maine, Germany.

CHEMICAL EXHIBITION CASE
—For Sale, a very handsome, large Case, in every
respect as good as new.—Apply, "Exhibition," *Chemical*
Trade Journal Office, Manchester.

FOR SALE—The Illustrated Journal
of Patents for 1895-6; 15s. per year.—Address in-
quiries to "P.I." *Chemical Trade Journal* Office, Man-
chester.

FOR SALE—Askham Bros. and
Wilson's SEPARATOR, as good as new.—Apply,
"Exhibition," *Chemical Trade Journal* Office, Man-
chester.

FILTER PRESSES, in first-class
condition, for Sale, with washing appliances, large
&c.—Address, "Filter Presses," *Chemical Trade*
Journal Office, Manchester.

SULPHIDE OF IRON for Sale,
very good quality. Inquiries solicited.—John Nichol-
son and Sons, Limited, Chemical Works, Hunslet, Leeds.

SULPHURIC ACID for SALE—
R.O.V., D.O.V., and B.O.V., made from Sulphur.—
Enquiries solicited.—John Nicholson & Sons, Limited
Leeds.

TO CHEMICAL ENGINEERS.—
Wanted, from Makers of Drying Plant, information
as to the best means of Drying Nitrogenous Material of
pasty consistency.—Address, "W.H.F.," *Chemical Trade*
Journal Office, Manchester.

TO CHEMICAL WORKS and
Others.—For SALE, large number of wrought and
cast-iron TANKS, all shapes and all sizes. Particulars on
application. Enquiries solicited.—Apply, Thomas W.
Ward, Fitzalan Chambers, Sheffield.

WANTED to Hire Railway Tank
Wagons for Conveyance of Vitriol. State monthly
terms, capacity, etc.—Address, "Vitriol," *Chemical Trade*
Journal Office, Manchester.

WATERFALL, about 9,500 effec-
tive horsepower; favourably situated; very
moderate, for SALE. Lime, clay, peat, pyrites, close to.
Thorvald M. Moe, Shipbroker, Drontheim.

WOLFRAM for SALE, about 8
tons. Samples and particulars may be obtained
from John Trevethan, Secretary of the Carn Brea and
Tincroft Mines, Limited, Carn Brea R.S.O., Cornwall.

WOODEN VESSELS of every
description, New or Second-hand; all shapes,
dimensions, and capacities. We have on hand the largest
stock in England, and firms requiring anything in this
direction are kindly invited to write for particulars, etc.,
to Henry Roberts & Co., Vat and Back Makers, Bancroft
Road, London, E.

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Softens the Bones without
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Extraction of the Grease
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Up to 95%
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SAML. MEGGITT & SONS, LTD.,
Glue, Gelatine, & Size Manufacturers,
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ALBUMENS, Pastes, Arabic Solution,
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Greases, Manure Materials, &c.

W. KING, Benson St., LIVERPOOL.

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PAGES 14 and 15
THREE WEEKS AGO.

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TARTAR EMETIC. HYPOSULPHITE OF SODA.
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LITHIA SALTS Salicylic Acid	Grape Sugar	Dry Plates,
BORAX Carbolic Acid	Cane Syrup	&c., &c.
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SAMPLES AND PRICES ON APPLICATION.

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TO be SOLD by PRIVATE TEN-

DER, pursuant to an Order of Mr. Justice Romer, dated 1st July, 1897, made in an action of In the Matter of Aman's Middlewich Salt Works, Limited, Fleay v the same Company, 1896, No. 832, the FREEHOLD LAND, SALT MINE SHAFT, COTTAGES and PREMISES (with possession), situate at Middlewich, Cheshire, occupied by the above-named Company, and the Goodwill of the Company's Business, Pump, Seven Salt Pans, Brine Tank, Building (comprising Carpenter's Shop Smithy, and Store), Engine, Seven Cottages together let at 19s. (d. per week), use of Private Railway Siding and of a Canal Basin connecting the Works with the London and North Western Railway and with the North Staffordshire Canal, subject to annual rentals amounting together to £2 per annum, also 18 open (8 ton) Railway Wagons, and 13 covered (8 ton) Railway Salt Vans, held under Hire Purchase Agreements expiring in 1901, and subject to payments amounting to £74. 14s. 6d., and sundry Loose Plant and Utensils. The Purchaser will be required to take and purchase the Manufactured and other Stock and Materials and the Book Debts at a Valuation.

Tenders are to be sent to A. W. Johanning, Esq., Suffolk House, Laurence Pountney Lane, London, E.C., not later than Saturday, the 11th day of December, 1897. The Tenders will be adjudicated upon by one of the Masters attached to the Chambers of Mr. Justice Romer, on Tuesday, the 14th day of December, 1897, at 12 o'clock noon, when the persons having tendered may, if they think fit, attend personally or by their solicitors.

The cheques for the deposits required to be sent with the Tenders will not be used where the Tender is not accepted, but will be returned to the person from whom received on or before the 17th day of December next.

Particulars and conditions of Sale and terms of Tender may be obtained gratis of the said A. W. Johanning, Messrs. R. Miller, Wiggins, and Naylor, St. Stephen's Chambers, Telegraph-street, London, E.C., and Messrs. Radcliffe, Cator, and Hood, of 20, Craven-street, Strand, London.—Dated this 15th day of November, 1897.

R. MILLER, WIGGINS, & NAYLOR,
St. Stephen's Chambers,
Telegraph-street, E.C.

Sales by Auction.

CHEMICAL WORKS AT PARKHEAD
FOR SALE BY PUBLIC AUCTION.

THERE will be exposed for SALE

by Public Auction, in the Liquidator's Chambers, 105, West George-street, Glasgow, on Wednesday, 24th current, at twelve o'clock noon, the whole of the PLANT, FURNITURE, and FITTINGS belonging to the CARN-TYNE CHEMICAL COMPANY, LTD., PARKHEAD, GLASGOW. Upset Price, £1,250. The principal Manufacture is Borax for which there is a large demand, and the site admits of considerable extension of the Works as occasion requires.

Further particulars may be learned on application to Messrs J. S. Calbraith and McGill, Writers, 69, St. Vincent-street, Glasgow, or to

HODGE & SMITH, C.A.

105, West George-street,
Glasgow, 4th November, 1897.

In the High Court of Justice, Chancery Division.—The General Electric Power and Traction Company (Limited), in Liquidation, v. Lewis.

PERCY HUDDLESTON & CO.

will SELL by AUCTION, at the MART, Token-house Yard, on DECEMBER 1st, 1897, in one lot, at one o'clock precisely (unless disposed of by private contract), the valuable LEASEHOLD PREMISES known as the Copper Depositing Works, West Ferry-road, Millwall, London, E., having a ground area of 75,000 sq. ft. and having a frontage to the River Thames of 9 ft. The wharf is connected with the various buildings with tramways, and is held at a ground rent of £250 per annum. The buildings comprise engine and boiler houses, depositing house, wire mill and other buildings also manager's house, offices, &c. The whole of the fixed plant and machinery will be included in the purchase and include two pairs of new horizontal compound condensing engines and three high-pressure boilers by Davey, Paxman, and Co., dynamos, vats, pumping plant, cranes, &c.—Further particulars may be had of E. Wilding, Esq., Chartered Accountant, 2, Clement's Inn, W.C.; Messrs. Ward, Perks, and McKay, Solicitors, 85, Gracechurch-street, E.C.; and of the Auctioneers, 72, Finsbury Pavement, London, E.C.

Miscellaneous.

Replies to Advertisements addressed to the "Chemical Trade Journal" Office are forwarded to Advertisers, post free.

CHEMICAL ENGINEER (A.I.C.), desires Engagement as Works Manager or Head Chemist; well up in Chemical operations generally; has laid down Plant and erected Manufacturing premises, experienced Technical Analyst; late with eminent firm, from whom first-class testimonial; moderate salary—Address, "Works," Chemical Trade Journal Office, Manchester.

CORRESPONDENCE SOLICITED.

Miscellaneous.—Cont.

1897. W. No. 3,562.

In the High Court of Justice, Chancery Division.—Mr. Justice Romer.—Between THOMAS GEORGE WEBB, Plaintiff, and F. HALLAM & SON (LIMITED), Defendants.—NOTICE IS HEREBY GIVEN, that the above Action has been commenced by THOMAS GEORGE WEBB, of 7, Market-street, Manchester, and is now pending against F. HALLAM & SON (LIMITED), of Dallow Chemical Works, Earton-on-Trent, claiming an INJUNCTION to Restrain the Infringement of the Plaintiff's Letters Patent, No. 2,343, of the year 1891; and that similar Proceedings will be instituted against all Persons manufacturing, Using, Selling or Purchasing Concentrated Sulphuric Acid made in infringement of the Plaintiff's Patent.—Dated this 4th day of November, 1897.
RADFORD & FRANKLAND,
40, Chancery Lane, London, W.C.,
Solicitors for the Plaintiff.

CHEMIST at liberty, owing to the Closing of the Clippens Oil Works, Loanhead. Knowledge of Metallurgy. First-class references.—Address T. Foulis, 21, Jolliffe-street, Liverpool.

EXPERIMENTAL Chemical Plant. Constructed Experiments carried out, Analyses made, and all descriptions of Plans, Estimates, &c., drawn up.—Terms on application to "Facilities," *Chemical Trade Journal* Office, Manchester.

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BOILERS, ENGINES, PUMPS, Cast and Wrought-iron TANKS, VACUUM and STEAM PANS, and every description of Second-hand PLANT and MACHINERY. Catalogues sent free on application.—Henry Roberts & Co., Engineers and Copper smiths, Bancroft Road, Mile End, London, E.

CARBIDE of CALCIUM and Patent Acetylene Gas Generator.—Sold by Read, Holliday and Sons, Limited, Huddersfield.

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J. STIFF & SONS,
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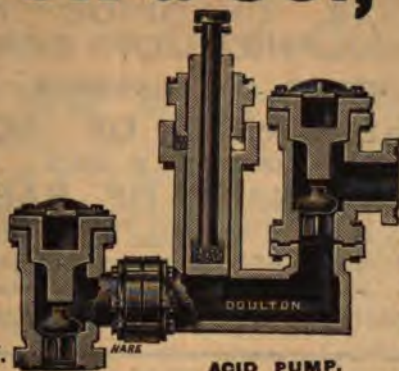
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RADFORD & FRANKLAND,
40, Chancery Lane, London, W.C.,
Solicitors for the Plaintiff.

ALKALI WORKS MANAGER

desires re-engagement. Experienced in Acid, Alkali, Bleach, Bichrome, and Superphosphate Manufacture and Tar Distilling. Experienced Chemist and Engineer. Excellent references and testimonials.—Address, "Manufacture," Chemical Trade Journal Office, Manchester.

Miscellaneous.—Cont.

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ASSISTANT CHEMIST (25), desires Position as Assistant in the Laboratory of Chemical or other Works; willing and trustworthy; moderate salary; good reference.—Address, "Analyst," *Chemical Trade Journal* Office, Manchester.

CHEMIST at liberty, owing to the Closing of the Clippens Oil Works, Loanhead. Knowledge of Metallurgy. First-class references.—Address T. Foulis, 21, Joffe-street, Liverpool.

CHEMIST desires re-engagement; experienced Technical Analyst. Five years' experience in Laboratory and Works; excellent references.—Address, "P 19," *Chemical Trade Journal* Office, Manchester.

COAL TAR Disinfectant Fluid, Soaps, and Powder Manufacturer.—Situation required (home or abroad), by Young Man, with eight years' experience with leading firms. Total abstainer. Good references.—Address, "A 42," *Chemical Trade Journal* Office, Manchester.

EXPERIMENTAL Chemical Plant. Constructed Experiments carried out, Analyses made, and all de-criptions of Plans, Estimates, &c., drawn up.—Terms on application to "Facilities," *Chemical Trade Journal* Office, Manchester.

MANAGER Wanted, with considerable experience, to place Disinfectants and Sheep Dips on the market. Must be able to introduce custom at home and abroad. State experience, terms, and full particulars in writing to "M 25," *Chemical Trade Journal* Office, Manchester.

PARTNERSHIP—Wanted Partner with £3,000, to join Advertiser, who has had over 30 years' experience, in transfer of well-established and profitable Chemical, Commission and Shipping Business in Liverpool.—Address, "W.H.S.," care of C. Birchall, Advertisement Contractor, 7, Victoria-street, Liverpool.

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TO Sulphate of Copper Manufacturers.—Wanted the names of Buyers and best offers for Engravers' Copper Slime.—Apply to "P. W. S.," *Chemical Trade Journal* Office, Manchester.

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BLAYDON MANURE AND ALKALI COMP.'S
PURE WHITE SULPHATE OF ALUMINA,
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UNITED ALKALI COMP.'S
HYPO-SULPHITE OF SODA,
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Also Hydrate and Anhydrous Alumina, Chloride and Carbonate of Alumina, Aluminate of Soda, Hydrate of Barium, &c.

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GLUES, PREPARED PITHS, Precipitated Bone Phosphate, Neatsfoot Oil,
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CARBOYS.

SHERDLEY GLASS WORKS, ST. HELENS.

Liverpool Exchange Chambers,
Glasgow: West Campbell-st.

Manchester: Oldham Road,
London: Worship Street B.O.

WALKER BROS., ENGINEERS, PAGEFIELD IRONWORKS, WIGAN.

WALKERS' PATENT
AIR COMPRESSING ENGINES.
GAS COMPRESSING ENGINES.
150,000 I.H.P. ALREADY AT WORK.

WALKERS' PATENT
EXHAUST AND BLAST FANS.

SPENCE'S ALUM.

PETER SPENCE & SONS,

Manchester Alum Works, MANCHESTER.

R. W. GREEFF & CO.,
3, EASTCHEAP, LONDON, E.C.
IMPORTERS OF

PUREST SULPHATE OF ALUMINA.
FLUORIDE OF CHROME (Patented). ANTIMONY SALTS.
TARTAR EMETIC. HYPOSULPHITE OF SODA.
SUGAR OF LEAD, WHITE AND BROWN.
ZINC OXIDE, OXALIC, ACETIC, TANNIC, & SALICYLIC
ACIDS, NITRATE & CHLORIDE OF BARIUM, &c.

SPECIALITIES:—

SODA ASH 58%	Phosphoric Acid	Castor Oil	Amidol, Metol, Glycin,
POTASHES	Acetates	Olive Oil	Thiocarbamid and other
SALTCAKE	Oxalic Acid	Essent. Oils	Photographicals,
BLEACH	Tartaric Acid	Glucose	Lumieres,
LITHIA SALTS	Salicylic Acid	Grape Sugar	Dry Plates,
BORAX	Carbolic Acid	Cane Syrup	&c., &c.
MERCURIALS	Camphor	Treacle	
SUL. COPPER	Stearine	Nitrate of Silver	(Pure)
PRUSSIANES	Glycerine		
CYANIDES	OLEINE		
METALS			
MINERALS			
BRIMSTONE			
SULPHUR			

IMPORTERS—Commission Merchants—EXPORTERS.
FUERST BROS.
LONDON: 17, Philpot Lane, E.C.
HEADQUARTERS
FOR ALL
HEAVY OR FINE
CHEMICALS,
Pharmaceutical Products,
Photographic Developers,
Drysalteries and Drugs,
Also OILS and PRODUCE.
SAMPLES AND PRICES ON APPLICATION.

Telegrams—
"FUERST, LONDON."

Tender.

TO be SOLD by PRIVATE TENDER, pursuant to an Order of Mr. Justice Romer, dated 1st July, 1897, made in an action of In the Matter of Aman's Middlewich Salt Works, Limited, Fleay v. the same Company, 1886a, No. 852, the FREEHOLD LAND, SALT MINE SHAFT, COTTAGES and PREMISES (with possession), situate at Middlewich, Cheshire, occupied by the above-named Company, and the Goodwill of the said Company's Business, Pump, Seven Salt Pans, Brine Tank, Building (comprising Carpenter's Shop Smithy, and Store), Engine, Seven Cottages (together let at 19s. 6d. per week), use of Private Railway Siding and of a Canal Basin connecting the Works with the London and North Western Railway and with the North Staffordshire Canal, subject to annual rentals amounting together to £2 per annum, also 18 open (8 ton) Railway Wagons, and 18 covered (4 ton) Railway Salt Vans, held under Hire Purchase Agreements expiring in 1901, and subject to payments amounting to £74. 14s. 6d., and sundry Loose Plant and Utensils. The Purchaser will be required to take and purchase the Manufactured and other Stock and Materials and the Book Debts at a Valuation.

Tenders are to be sent to A. W. Johanning, Esq., Suffolk House, Laurence Pountney Lane, London, E.C., not later than Saturday, the 11th day of December, 1897. The Tenders will be adjudicated upon by one of the Masters attached to the Chambers of Mr. Justice Romer, on Tuesday, the 14th day of December, 1897, at 12 o'clock noon, when the persons having tendered may, if they think fit, attend personally or by their solicitors.

The cheques for the deposits required to be sent with the Tenders will not be used where the Tender is not accepted, but will be returned to the person from whom received on or before the 17th day of December next.

Particulars and conditions of Sale and terms of Tender may be obtained gratis of the said A. W. Johanning, Messrs. R. Miller, Wiggin & Naylor, St. Stephen's Chambers, Telegraph-street, London, E.C., and Messrs. Radcliffes, Cator, and Hood, of 20, Craven-street, Strand, London.—Dated this 13th day of November, 1897.

R. MILLER, WIGGINS, & NAYLOR,
St. Stephen's Chambers,
Telegraph-street, London, E.C.

Sale by Auction.

CHEMICAL WORKS AT PARKHEAD, GLASGOW, for SALE by PUBLIC AUCTION.

THERE will be Exposed for SALE by PUBLIC AUCTION, in the Liquidators' Chambers, 105, West George-street, Glasgow, on Tuesday, 14th current, at twelve o'clock noon, the whole Plant, Furniture, and Fittings belonging to the Carntyne Chemical Company, Limited, Parkhead, Glasgow.

Upset price £750.

The principal manufacture is Borax, for which there is a large demand, and the site admits of considerable extension of the Works as occasion requires. The Works are fully employed at present.

Further particulars may be learned on application to Messrs. J. S. Galbraith & McGill, Writers, 69, St. Vincent-street, Glasgow, or to

HODGE & SMITH, C.A.

105, West George-street,
Glasgow, 1st Dec., 1897.

Miscellaneous.

Replies to Advertisements addressed to the "Chemical Trade Journal" Office are forwarded to Advertisers, post free.

TRADE with GERMANY.—Gentleman, with good connection, wishes to Represent Manufacturers of Specialities in Germany; best of reference.—E. Jasmin, Frankfort-on-Maine, Germany. Established 1882.

1897. W. No. 3,562.
IN the High Court of Justice, Chancery Division.—Mr. Justice Romer.—Between THOMAS GEORGE WEBB, Plaintiff, and F. HALLAM & SON (LIMITED), Defendants.—NOTICE IS HEREBY GIVEN, that the above Action has been commenced by THOMAS GEORGE WEBB, of 7, Market-street, Manchester, and is now pending against F. HALLAM & SON (LIMITED), of Dallow Chemical Works, Furtton-on-Trent, claiming an INJUNCTION to Restrain the Infringement of the Plaintiff's Letters Patent, No. 2,343, of the year 1891; and that similar Proceedings will be instituted against all Persons manufacturing, Using, Selling or Purchasing Concentrated Sulphuric Acid made in infringement of the Plaintiff's Patent.—Dated this 4th day of November, 1897.
RADFORD & FRANKLAND,
40, Chancery Lane, London, W.C.,
Solicitors for the Plaintiff.

AN Italian Gentleman, Civil Mechanical Engineer, at present with a well-known English firm, shortly returning to Italy, is willing to act as Agent for Machinery Manufacturers of every description. Highest references.—Address, "Ingegnere," Chemical Trade Journal Office, Manchester.

CORRESPONDENCE SOLICITED.

Miscellaneous.—Cont.**ANALYTICAL CHEMIST** Seeks

Employment; has been pupil for 1½ years at well-known Agricultural Laboratory and Assistant in Pathological Laboratory.—Address, "S," Hollies Park Hill, Clapham, London, S.W.

CHEMIST, with some experience,

Wanted to take charge of Process Work in the Manufacture of Sulphuric Acid and Artificial Manures. Must be experienced in the Analyses connected with same. Send copies of testimonials and state age, particulars of experience, and salary required, to "Works Chemist," *Chemical Trade Journal* Office, Manchester.

CHEMIST at liberty, owing to the

Closing of the Clippens Oil Works, Loanhead. Knowledge of Metallurgy. First-class references.—Address T. Foulis, 21, Joliffe-street, Liverpool.

CHEMIST desires re-engagement;

experienced Technical Analyst. Five years' experience in Laboratory and Works; excellent references.—Address, "P 19," *Chemical Trade Journal* Office, Manchester.

CHEMICAL ENGINEER (A.I.C.),

desires Engagement as Works Manager or Head Chemist; well up in Chemical operations generally; has laid down Plant and erected Manufacturing premises, experienced Technical Analyst; late with eminent firm, from whom first-class testimonial; moderate salary.—Address, "Works," *Chemical Trade Journal* Office, Manchester.

CHEMICAL PLUMBER desires

Engagement, well up in Erection and Repairs of general Chemical Plant; good references.—Address, "Plumber," *Chemical Trade Journal* Office, Manchester.

COAL TAR Disinfectant Fluid,

Soaps, and Powder Manufacturer.—Situation required (home or abroad), by Young Man, with eight years' experience with leading firms. Total abstainer. Good references.—Address, "A 42," *Chemical Trade Journal* Office, Manchester.

EXPERIMENTAL Chemical Plant.

Constructed Experiments carried out, Analyses made, and all descriptions of Plans, Estimates, &c., drawn up.—Terms on application to "Facilities," *Chemical Trade Journal* Office, Manchester.

MANAGER desires Engagement—

Vitriol Rectified, Cylinder and Nitric Acids; Alkali, Bleach, Chlorate, Tin Crystals, Glauber Salts, Oleine Oils, Epsoms, etc.—Address, "T 42," *Chemical Trade Journal* Office, Manchester.

WANTED a thoroughly practical

steady Man, accustomed to Bleaching Bone Grease. He must be acquainted with the best process, and able to carry the business through. Correspondence treated in confidence.—Apply, "G 19," *Chemical Trade Journal* Office, Manchester

WANTED, Two Dry Coopers, first-

class hands, steady men only, permanent situation. West Riding of Yorkshire.—Apply, "L F," *Chemical Trade Journal* Office, Manchester.

BOILERS, ENGINES, PUMPS,

Cast and Wrought-iron TANKS, VACUUM and STEAM PANS, and every description of Second-hand PLANT and MACHINERY. Catalogues sent free on application.—Henry Roberts & Co., Engineers and Copper smiths, Bancroft Road, Mile End, London, E.

CARBIDE of CALCIUM and Patent

Acetylene Gas Generator.—Sold by Read, Holliday and Sons, Limited, Huddersfield.

CALCIUM CARBIDE for Sale, in

Large or Small Quantities.—Apply to E. Jasmin, Frankfort-on-Maine, Germany.

CHEMICAL EXHIBITION CASE

—For Sale, a very handsome, large Case, in every respect as good as new.—Apply, "Exhibition," *Chemical Trade Journal* Office, Manchester.

FOR SALE, Cheap, quantity of

Cryolite Slag, and about 8 tons of Bauxite, 3 Chemical Balances, also Dynamo, 110 volts 75 amperes, ditto, 8 volts 2,000 amperes, and two others.—Address, "Technical," *Chemical Trade Journal* Office, Manchester.

J. STIFF & SONS,

MANUFACTURERS OF

CHEMICAL APPARATUS

IN VITRIFIED STONEWARE.

ACID PANS, ACID PIPES & CONNECTIONS, RECEIVERS, CONDENSING WORMS, RETORTS, COCKS, JARS, BOTTLES & INSULATORS, BATTERY JARS, POROUS CELLS, &c., &c.

LAMBETH, LONDON, S.E.

**GLUE.**

Manufacturers of all kinds of Fine, Scotch, Town, Medal, and other Glues, Gelatine, Size, Grease, Manure, Powdered Glues in all qualities, Starch, &c.

APPLY
The GROVE CHEMICAL CO., Ltd., Crown Works,
APPLEY BRIDGE, WIGAN, LANCs.

FULLER'S

BONE STEAMER.

Softens the Bones without extracting any of the Nitrogenous Substance.



Extraction of the Grease within an hour.

ESTIMATES FOR COMPLETE

BONE STEAMING AND GRINDING PLANT.

GRINDING MACHINERY

FOR EVERY DESCRIPTION OF MATERIAL.

W. M. FULLER, Jun.,

88, Great Charles Street, Birmingham

TUBES

IRON and STEEL, and FITTINGS,

for Gas, Water, Steam, Liquid Ammonia and Hydraulic Work. All kinds and sizes—Welded or Riveted.

Tanks, Pans, and all kinds of Ironwork for Chemical Work.

COILS for heating, super-heating, distilling and refrigerating purposes, to 500 feet long without joints.

JOHN SPENCER, Globe Tube Works, Wednesbury.

Manlove, Alliott & Co. Ltd.,

ENGINEERS,

NOTTINGHAM.

See Advertisement in first issue this month.

SAML. MEGGITT & SONS, LTD.,

Glue, Gelatine, & Size Manufacturers,

SUTTON-IN-ASHFIELD, NOTTS.

(Late BINDLEY & SON, Ltd., SMETHWICK.)

HARPERS' LIST.

PAGES 14 and 15
THIS WEEK.

ALBUMENS, Pastes, Arabic Solution, Vegetable and Animal Size, Gums, GLUES, PREPARED PITHS, Precipitated Bone Phosphate, Neatsfoot Oil, Greases, Manure Materials, &c.

W. KING, Benson St., LIVERPOOL.

BRYAN CORCORAN, L.T.D.
MILLSTONE BUILDER,

WIRE WEAVER, MACHINE MANUFACTURER AND GENERAL MILL FURNISHER.

Sole Maker of MILBURN'S Patent Conoidal Stone Grinding Mills.

Especially suitable for certain materials, Wet or Dry.

Works and Warehouses:

Back Church Lane. Parcel Dept.: Basement of the Corn Exchange

31, MARK LANE, LONDON.



CANNINGTON, SHAW & CO., LIMITED,

CARBOYS.

SHERDLEY GLASSWORKS, ST. HELENS.

Liverpool Exchange Chambers,
Glasgow: West Campbell st.

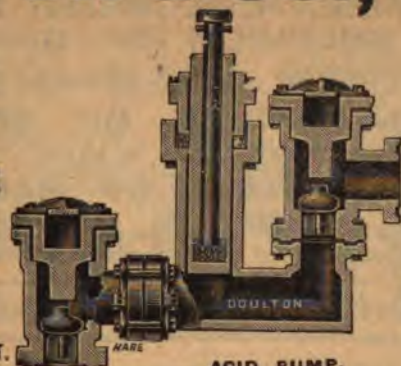
Manchester: Oldham Road,
London: Worship Street E.C.

OULTON & CO.,

LAMBETH,
LONDON,

MANUFACTURERS OF
STONEWARE
CHEMICAL
APPARATUS
OF
EVERY DESCRIPTION.

PRICE LISTS
ON APPLICATION.



ACID PUMP.

IMPROVED
STONEWARE
ACID PUMPS.

Each Pump prior to
leaving the Factory
is put into actual
work and tested.

SHOWROOMS: 17, Deansgate, Manchester; 100, Soho St., Liverpool
Granville St., Birmingham; 38 and 40, Bothwell St., Glasgow;
6, Rue de Paradis, Paris.

ALUMINO FERRIC.

ETER SPENCE & SONS,
Manchester Alum Works, MANCHESTER.

VALUATIONS.

Messrs. W. J. FRASER and CO., Engineers, 98, Commercial Road East,
London, undertake Valuations of and Reports on Engineering Plant and
Machinery for Company Formation, Partnership, Fire Assessment, Probate
and other purposes. Drawings and Specifications prepared for New
Engineering Plant on fixed charges.

Telephone No. 4413. Telegraph: "FRASER, ENGINEER, LONDON."

PURE & CEMENT PLANT

Grinding and Crushing Machinery

MAKERS' MIXERS.

HCHITT BROTHERS, Carlisle.

MATT. H. TYACK,
SWANSEA,

Mineral Broker and General Commission Agent.

Dealer in all kinds of Minerals & Chemicals

Correspondence Solicited.

CHEMICAL PLANT.

W. NEILL & SON.

SPECIALITIES:

High or Low Speed.	DRIVING ENGS.	For all purposes.	GRINDING ML.	Filter Presses.	Castings. Burner Fronts, etc.	Vertical and Horizontal	BLOWING ENGS.	PUMPS	AIR COMPRESSORS.
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GLYCERINE PLANTS.

St. Helens Junc., Lancs.

SOAP MACHINERY.

Tanks
and
Wrought Ironwork

Tender.

KYNOCH LIMITED invite Tenders
for the supply to their various Works of the under-
mentioned materials for a term of six or twelve months,
from the 1st day of January, 1898.

1. **TIMBER**:—Spruce, Red Deal, Elm, M'hd's, Hard
Sawdust, Box Pieces, etc.
2. **GENERAL STORES and DRYSALTERY**:—
Ropes, Twines, Oils, I.R. Goods, Hemp and
Asbestos Packing, Paints, Brushes, Methy-Finish,
Soaps, Coke Scuttles, Nails, Wood Screws, Lead
Shot, Leather Goods, Crucibles, Glue, Spades,
Polishing Materials, etc.
3. **ENGINEERS' STORES**:—Bolts and Nuts, Tubes,
Valves, Files, Name Punches, Hand Tools, Grind-
stones, Soap Die Plates, Stencils, etc.
4. **SOFT GOODS**:—Linsey, Serge, Baize, Cloth,
Wadding Felts, Fents, Silesia, Jean, Cotton
Waste, Sponge Cloths, Packing Bags, etc.
5. **IRON, STEEL, and OTHER METAL WARE**:
Black Sheets, Tinplates, Bar Iron, Steel Strip,
Galvanized Buckets, Tinfoil, Sheet Lead, Iron,
and G. M. Castings, Swedish Iron and Steel,
Tungsten, Ferro-Mn., Ferro-Sil. Spiegeleisen,
Aluminium, Ore, etc.
6. **BUILDING MATERIALS**:—Furnace Bricks and
Clay, Red and Fire Bricks, Lime, Slates, Cement,
Gannister, China Clay, etc.
7. **PAPERS, GLAZED LEATHER, BOARDS and
CARD BOXES**:—Browns, Coloured, Tissues,
Printings, Vegetable Parchment, etc.
8. **CHEMICALS**:—Aquaforis, OV., Salt, Barytes,
Soda Ash, Chalk Charcoal, Sulphur, Saltpetre,
Woodmeal, Kieselguhr, Carbolic Acid, Muriatic
Acid, Vinegar, etc.

All information, with forms of Tender, may be obtained,
and samples may be viewed, on application. Written
applications should be marked "Tender Forms."

The Company do not pledge themselves to accept the
lowest or any tender.

Tenders (which must be made on the form supplied) to
be addressed to THE DIRECTORS OF KYNOCH
LIMITED, LION WORKS, WITTON, BIRMING-
HAM, marked "TENDER," and must be sent so as to
be delivered not later than 22nd December.

By order of the Board
FRANK HUXHAM,
Secretary.

Lion Works, Witton,
Birmingham,
Dec. 1th, 1897.

Sale by Auction.

CHEMICAL WORKS AT PARKHEAD,
GLASGOW, for SALE by PUBLIC AUCTION.

THERE will be Exposed for SALE
by PUBLIC AUCTION, in the Liquidators'
Chambers, 105, West George-street, Glasgow, on Tuesday,
14th current, at twelve o'clock noon, the whole Plant,
Furniture, and Fittings belonging to the Carntyne Chemical
Company, Limited, Parkhead, Glasgow.

Upset price, £750.

The principal manufacture is Borax, for which there is a
large demand, and the site admits of considerable extension
of the Works as occasion requires. The Works are fully
employed at present.

Further particulars may be learned on application to
Messrs. J. S. Galbraith & McGill, Writers, 69, St. Vincent-
street, Glasgow, or to

HODGE & SMITH, C.A.

105, West George-street,
Glasgow, 1st Dec., 1897.

Miscellaneous.

Replies to Advertisements addressed to the
"Chemical Trade Journal" Office are forwarded to
Advertisers, post free.

1897.—W.—397X.

IN the High Court of Justice, Chancery
Division.—Mr. Justice Sirling.—Between THOMAS
GEORGE WEBB, Plaintiff, and LEVINSTEIN
LIMITED, Defendants.—NOTICE is hereby given by
THOMAS GEORGE WEBB, of Queen's Chambers, 7,
Market-street, Manchester to his Licensees, Customers,
Manufacturers, and others, that the above Action has this
day been commenced by him in the Chancery Division of
the High Court of Justice against the above-named
LEVINSTEIN LIMITED for an injunction to restrain
the Defendants from continuing to threaten the Plaintiff or
any other person or persons whereby the Plaintiff may be
aggrieved by circulars advertisements, or otherwise with
any legal proceedings or liability in respect of any alleged
manufacture, use, sale, or purchase of any invention in
infringement of the Defendants' Patent (if any) and
for damages for injury accrued to the Plaintiff in respect
of the said threats.

All persons against whom similar threats have been
uttered are requested to communicate with the said Thomas
George Webb or his Solicitors.

RADFORD & FRANKLAND,
49, Chancery Lane, London, W.C.,
Solicitors for the Plaintiff.

Dated 3rd day of Dec., 1897.

Miscellaneous.—Cont.

1897. W. No. 3,562.
In the High Court of Justice, Chancery Division.—Mr. Justice Romer.—Between THOMAS GEORGE WEBB, Plaintiff, and F. HALLAM & SON (LIMITED), Defendants.—NOTICE IS HEREBY GIVEN that the above Action has been commenced by THOMAS GEORGE WEBB, of 7, Market-street, Manchester, and is now pending against F. HALLAM & SON (LIMITED), of Dallow Chemical Works, Furtton-on-Trent, claiming an INJUNCTION to Restrain the Infringement of the Plaintiff's Letters Patent, No. 2,343, of the year 1891; and that similar Proceedings will be instituted against all Persons manufacturing, Using, Selling, or Purchasing Concentrated Sulphuric Acid made in infringement of the Plaintiff's Patent.—Dated this 4th day of November, 1897.
 RADFORD & FRANKLAND,
 40, Chancery Lane, London, W.C.,
 Solicitors for the Plaintiff.

ALKALI WORKS MANAGER desires re-engagement. Experienced in Acid, Alkali, Bleach, Bichrome, and Superphosphate Manufacture and Tar Distilling. Experienced Chemist and Engineer. Excellent references and testimonials.—Address, "Manufacture," *Chemical Trade Journal* Office, Manchester.

CHEMIST at liberty, owing to the Closing of the Clippens Oil Works, Loanhead. Knowledge of Metallurgy. First-class references.—Address T. Foulis, 21, Jolliffe-street, Liverpool.

CHEMIST desires re-engagement; experienced Technical Analyst. Five years' experience in Laboratory and Works; excellent references.—Address, "P 19," *Chemical Trade Journal* Office, Manchester.

CHEMICAL PLUMBER desires Engagement, well up in Erection and Repairs of general Chemical Plant; good references.—Address, "Plumber," *Chemical Trade Journal* Office, Manchester.

COAL TAR Disinfectant Fluid, Soaps, and Powder Manufacturer.—Situation required (home or abroad), by Young Man, with eight years' experience with leading firms. Total abstainer. Good references.—Address, "A 42," *Chemical Trade Journal* Office, Manchester.

EXPERIMENTAL Chemical Plant. Constructed Experiments carried out, Analyses made, and all descriptions of Plans, Estimates, &c., drawn up.—Terms on application to "Facilities," *Chemical Trade Journal* Office, Manchester.

MANAGER desires Engagement.—Vitriol Rectified, Cylinder and Nitric Acids; Alkali, Bleach, Chlorate, Tin Crystals, Glauber Salts, Oleine Oils, Epsoms, etc.—Address, "T 42," *Chemical Trade Journal* Office, Manchester.

PERMANENCY Required as Assistant Chemist (25), in the Laboratory of Chemical or other Works. Willing and trustworthy. Moderate salary. Good reference.—Address, "Bromo," *Chemical Trade Journal* Office, Manchester.

SOAP and CANDLE WORKS.—Manager desires re-engagement. Thoroughly practical in all kinds of Soaps, Candles, and Perfumery. Well up in Engineering and Building Construction. Excellent references.—Address, "Soap," *Chemical Trade Journal* Office, Manchester.

WANTED, Two Dry Coopers, first-class hands, steady men only, permanent situation. West Riding of Yorkshire.—Apply, "L. F.," *Chemical Trade Journal* Office, Manchester.

ACETYLENE.—Patent for Sale.—WANTED to SELL the BRITISH PATENT for the AUTOMATIC ACETYLENE GENERATOR of V. Daix, C.E., Knight of the Legion of Honour. The most perfect apparatus, having won the highest awards, viz., three diplomas of honour at Bourges, Vesoul, and Le Tréport exhibitions.—Address, SOCIÉTÉ D'ETUDE ET DE CONSTRUCTIONS D'USINES, 72, Rue Louis Blanc, Paris.

BOILERS, ENGINES, PUMPS, Cast and Wrought-iron TANKS, VACUUM and STEAM PANS, and every description of Second-hand PLANT and MACHINERY. Catalogues sent free on application.—Henry Roberts & Co., Engineers and Copper smiths, Bancroft Road, Mile End, London, E.

CARBIDE of CALCIUM and Patent Acetylene Gas Generator.—Sold by Read, Holliday

BLAYDON MANURE AND ALKALI COMP'S
PURE WHITE SULPHATE OF ALUMINA,
BLANC FIXE, CHLORIDE, NITRATE,
AND SULPHIDE OF BARIUM.

UNITED ALKALI COMP'S
HYPO-SULPHITE OF SODA,
WALTHER FELD & CO'S
PURE PRECIP. CARBONATE OF BARYTES 96/98%
 Also Hydrate and Anhydrous Alumina, Chloride and Carbonate of Alumina, Aluminate of Soda, Hydrate of Barium, &c.

Agents: JULIUS HULSEN & CO., NEWCASTLE-ON-TYNE.

ALL SIZES
OF CARBOYS
KEPT



& KINDS
& HAMPERS
IN STOCK.

ALBUMENS, Pastes, Arabic Solution, Vegetable and Animal Size, Gums, **GLUES**, PREPARED PITHS, Precipitated Bone Phosphate, Neatsfoot Oil, Greases, Manure Materials, &c.

W. KING, Benson St., LIVERPOOL.

Manlove, Alliot & Co. Ltd.,
ENGINEERS,
NOTTINGHAM.

See Advertisement in first issue this month.

SAML. MEGGITT & SONS, LTD.,
 Glue, Gelatine, & Size Manufacturers,
SUTTON-IN-ASHFIELD, NOTTS.
 (late BINDLEY & SON, Ltd., SMETHWICK.)

HARPERS'
LIST.

PAGES 14 and 15
LAST WEEK.

TUBES

IRON and STEEL, and FITTINGS,

for Gas, Water, Steam, Liquid Ammonia and Hydraulic Work. All kinds and sizes—Welded or Riveted.

Tanks, Pans, and all kinds of Ironwork for Chemical Work.

COILS for heating, super-heating, distilling and refrigerating purposes, to 500 feet long without joints.

JOHN SPENCER, Globe Tube Works, Wednesbury.

BRYAN CORCORAN, L^{TD}.
MILLSTONE BUILDER,

WIRE WEAVER, MACHINE MANUFACTURER AND GENERAL MILL FURNISHER.

Sole Maker of MILBURN'S Patent Conoidal Stone Grinding Mills.

Especially suitable for certain materials, Wet or Dry.

Works and Warehouses: Back Church Lane. Parcel Dept.: Basement of the Corn Exchange

31, MARK LANE, LONDON.

CANNINGTON, SHAW & CO., LIMITED,

CARBOYS.

SHERDLEY GLASSWORKS. ST. HELENS.

Liverpool: Exchange Chambers, Glasgow: West Campbell-st.

Manchester: Oldham Road, Bolton: Wharfedale Street N.C.

ULTRAMARINE

Of various qualities, for all purposes, and **PAPER MAKERS' CHEMICALS**, made by
THE UNITED ALKALI COMPANY, LIMITED, NETHAM WORKS,
BRISTOL, ENGLAND.

TO WHOM APPLY FOR SAMPLES AND PRICES. **BUYERS' SAMPLES MATCHED.**

AGENTS.—C. TENNANT, SONS & CO., 9, Mincing Lane, LONDON.

GRINDING FOR THE TRADE.

ORES, COLOURS, DISINFECTANTS, FULLER'S EARTH, and all kinds of Dry Grinding done for the Trade at very low prices by the most modern Machinery Warehouse Room and Cartage if required.

THOS. HILL-JONES, 31, Eagle Wharf Road, LONDON, N.

A. KLIPSTEIN & CO.,

122, PEARL STREET,

NEW YORK,

Boston, Philadelphia, Chicago, Hamilton, Ont.

IMPORTERS OF

ANILINE COLOURS, DYESTUFFS,

Drysalteries and Chemicals

For Dyers, Bleachers, Calico Printers, Tanners,
 Wall Paper Manufacturers, Chemical Manufacturers, Glass Makers,
 Soap Makers, Paper Manufacturers, Paint Manufacturers,
 Metallurgists, Ink Manufacturers, Chemicals for Electrical and Galvanising
 Purposes, and other industries.

EXPORTERS OF

ACETATE OF LIME, QUERCITRON BARK,

SULPHATE OF COPPER, AND OTHER AMERICAN PRODUCTS.

**PHOSPHORIC ACID,
 PHOSPHATE OF SODA.**

MANUFACTURERS OF

Phosphate of Soda.

Phosphate of Ammonia.

Phosphoric Acid (pure).

Do. do. (commercial).

Do. do. (crude).

Do. do. (solid).

"Tripsa," or Tri-basic Phos-
 phate of Soda for Steam
 Boilers.

Acid Phosphate of Lime.

Phosphide of Calcium (for Flare
 lights at sea).

Phosphate of Lime (pure-
 precipitated).

Bi-sulphate of Potash.

Clauber Salts (Exsiccated).

Sulphate of Iron "

Gypsum. Phosphatic.

Brunswick Black.

Turpentine Deck Varnish.

**PERRY & HOPE,
 KIRKINTILLOCH, N. B.**

TO MAKERS of SULPHURIC ACID

The increasing demand for **SULPHURIC ACID** in England must draw the attention of
 Manufacturers to my

PLATE TOWERS for INCREASING the OUTPUT

Of existing Plants, as the addition can be made almost without interfering with the working of the Installation.

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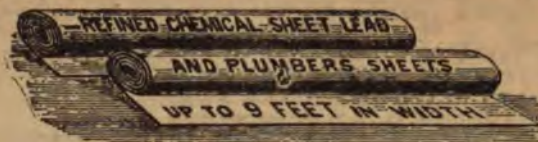
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